



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**TRANSFORMING CHANGE IN THE MILITARY:
A SYSTEMS APPROACH**

by

James G. Alden
Amber L. Hopeman
Jodi A. Neff

June 2007

Thesis Advisor:
Thesis Co-Advisor
Second Reader:

Erik Jansen
George Lober
Gordon McCormick

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.			
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE June 2007	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE Transforming Change in the Military: A Systems Approach		5. FUNDING NUMBERS	
6. AUTHOR(S) Jamie Alden, Amber Hopeman, Jodi Neff		8. PERFORMING ORGANIZATION REPORT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000		10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited		12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words)			
<p>Why are military organizations resistant to change? In an attempt to answer this question, this thesis proposes the use of systems thinking to evaluate the military and its ability to effect change. Rather than investigate individual components of the environment, systems thinking dictates the study of the relationships between system components. We offer two frameworks to examine these relationships. The prescriptive framework, developed via literature, illustrates how each of the military subsystems of strategy, doctrine, and organization should interact. The theoretical framework shows how these subsystems interact in reality. A study of the theoretical framework illustrates differences from the prescriptive framework and where resistance to change within the military system actually occurs. We find there are many barriers to change to include doctrinal rigidity and a legacy force structure that is preserved by a dominant culture, the misuse of history, and the inability to learn from past failures.</p> <p>Systems thinking, as seen through these frameworks, can apply to <i>every</i> military organization and be very useful in not only realizing the need for change but understanding how these changes affect the entire system. More importantly, through systems thinking, the inhibitors to change can finally be realized and understood.</p>			
14. SUBJECT TERMS Systems Thinking, Learning Organization, Organizational Learning, Change, Inhibitors to Change, Doctrine, Organization, Military Strategy		15. NUMBER OF PAGES 99	
		16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. Z39-18

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

TRANSFORMING CHANGE IN THE MILITARY: A SYSTEMS APPROACH

James G. Alden
Major, United States Army
B.S., United States Military Academy, 1997

Amber L. Hopeman
Lieutenant, United States Navy
B.S., United States Naval Academy, 2000

Jodi A. Neff
Major, United States Air Force
B.S., University of Utah, 1993

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN DEFENSE ANALYSIS

from the

NAVAL POSTGRADUATE SCHOOL
June 2007

Authors: James G. Alden

Amber L. Hopeman

Jodi A. Neff

Approved by: Dr. Erik Jansen
Thesis Advisor

George Lober
Co-Advisor

Dr. Gordon McCormick
Second Reader

Dr. Gordon McCormick
Chairman, Department of Defense Analysis

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

Why are military organizations resistant to change? In an attempt to answer this question, this thesis proposes the use of systems thinking to evaluate the military and its ability to effect change. Rather than investigate individual components of the environment, systems thinking dictates the study of the relationships between system components. We offer two frameworks to examine these relationships. The prescriptive framework, developed via literature, illustrates how each of the military subsystems of strategy, doctrine, and organization should interact. The theoretical framework shows how these subsystems interact in reality. A study of the theoretical framework illustrates differences from the prescriptive framework and where resistance to change within the military system actually occurs. We find there are many barriers to change to include doctrinal rigidity and a legacy force structure that is preserved by a dominant culture, the misuse of history, and the inability to learn from past failures.

Systems thinking, as seen through these frameworks, can apply to *every* military organization and be very useful in not only realizing the need for change but understanding how these changes affect the entire system. More importantly, through systems thinking, the inhibitors to change can finally be realized and understood.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
II.	DEFINITIONS AND EXPLANATIONS.....	7
A.	CHANGE	7
B.	SYSTEMS THINKING	10
III.	THE LEARNING ORGANIZATION IN REVIEW	13
A.	OVERVIEW	13
B.	THE CONCEPTUALIZATION OF THE LEARNING ORGANIZATION	13
C.	THE U.S. MILITARY'S INTERPRETATION	14
D.	THE LEARNING ORGANIZATION VS. ORGANIZATIONAL LEARNING	15
E.	LEARNING ORGANIZATION FRAMEWORK – THE FIVE DISCIPLINES	19
1.	Personal Mastery	19
2.	Team Learning	21
3.	Building Shared Vision.....	22
4.	Mental Models.....	23
5.	The Fifth Discipline- Systems Thinking.....	25
F.	SUMMARY	27
IV.	A PRESCRIPTIVE FRAMEWORK OF THE MILITARY SYSTEM.....	29
A.	THE PRESCRIPTIVE FRAMEWORK	29
B.	STRATEGY SUBSYSTEM	31
C.	ORGANIZATIONAL SUBSYSTEM	31
D.	DOCTRINE SUBSYSTEM.....	34
E.	TECHNOLOGY SUBSYSTEM	35
F.	CULTURE SUBSYSTEM.....	36
G.	A BALANCING ACT	37
H.	SYSTEMS THINKING AS A TOOL TO DEAL WITH COMPLEXITY	38
V.	A THEORETICAL FRAMEWORK OF THE MILITARY SYSTEM.....	41
A.	INTRODUCTION.....	41
B.	THE FRAMEWORK	42
C.	THREAT ENVIRONMENT.....	44
D.	TECHNOLOGY	48
E.	STRATEGY.....	50
F.	DOCTRINE	53
1.	Doctrinal Rigidity.....	53
2.	Misuse of History	56
G.	ORGANIZATIONAL SUBSYSTEM	58
1.	Organizational Structure	59

<i>a.</i>	<i>Legacy Structure of the Military</i>	59
<i>b.</i>	<i>Service Dominance</i>	60
2.	Organizational Process.....	63
<i>a.</i>	<i>Recruiting Process</i>	63
<i>b.</i>	<i>Promotion Process</i>	63
H.	COMMON MISCONCEPTION OF CULTURE	65
I.	CONCLUSION	67
VI.	CONCLUSION	69
A.	REALIZING THE NEED FOR CHANGE	69
B.	WHY ARE MILITARY ORGANIZATIONS RESISTANT TO CHANGE?	70
C.	RECOMMENDATIONS.....	70
LIST OF REFERENCES		73
BIBLIOGRAPHY		81
INITIAL DISTRIBUTION LIST		83

LIST OF FIGURES

Figure 1.	Types of Change	8
Figure 2.	The Five Disciplines of a Learning Organization.....	19
Figure 3.	The Prescriptive Framework of Military Subsystems	29
Figure 4.	The Theoretical Framework of the Military System.....	43

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

We would like to thank first and foremost, the man that posed the question in class one day, “Why are military organizations resistant to change?” Your guidance and faith in us made it possible for us to tackle such a difficult question; Thank you, Dr. Gordon McCormick, for letting us help you answer it.

We also would like to thank our other two advisors, Erik Jansen and George Lober. Erik, we couldn’t have done this without your advice and direction. Your questions and comments motivated us to think outside the box and beyond our comfort zone occasionally, but truly guided us in this process.

George, as always we are humble admirers of your aptitude of the English language. We realized from the beginning that your assistance would be needed and wonderfully appreciated. Like the waves of the bay upon which we have had the privilege to gaze for our tenure at this institution, your expertise was what let this rough pebble of a paper become a polished stone.

We would be remiss if we did not thank the rest of the faculty in the Defense Analysis Department, each of whom guided our education and thought process for the past 18 months. We want to thank all those who, on their own time, lent their ears and eyes to this paper. Thank all of you for your interest in our project and support in finding the right approach.

Dr. John Arquilla, your initial guidance for research proved to be the foundation for the remainder of the thesis process. Thank you for your support in this endeavor and your own dedication to understanding the military, its transformation, its successes and failures.

Prof. Nancy Roberts, we want to thank you for your help in class and out. We realized early on that what we were dealing with truly was a “Wicked Problem,” and you gave us hope that we could find a “way in.”

Colonel (Ret) Pete Gustaitis, thank you for lending your military experience and critique to this thesis. During class and after you gave us insight and an understanding of

the strategic aspect of the military, which we can only hope we will be a part of one day. More importantly however, with respect to your victory at the last Golf Tournament, “We demand a rematch!!”

Prof. Doug Borer, thank you for letting us use your class as a testing platform for this thesis when it was in its beginning stages. Also thank you for your honest critique and reality check when it came to our writing skills! We hope this shows some improvement.

And we cannot forget Dr. Kalev “Gunner” Sepp. For once, with authority, we can tell you this undertaking was *NOT* a special operation! We appreciate your encouragement and feedback on our related articles.

Thank you to the library staff for allowing us to have a study room for so long and letting Jodi and Amber in when Jamie had taken the key somewhere and we couldn’t find him. Also thank you to the folks at Hope for not erasing our whiteboard after the first incident.

For those that contributed to us maintaining our sanity and composure during times of stress and frustration with this thesis, we want to send a big Thank You and Cheers! The Trident Room staff: Pete, My, Lin and Crazy George, Thursdays will never be the same once we have left here. We will miss your hospitality, getting yelled at for not paying our tabs, and the half eaten popcorn Crazy has undoubtedly thrown back into the machine to be served again. Thank you for the happiest of happy hours!!

Since this was a group thesis, there are some individual acknowledgements that each of us would like to make:

Amber: I would just like to thank Jamie for letting me tag onto this project and then Jodi for letting us talk her into joining it also. I couldn’t have asked for a better team to work with, or better friends to have gained. This was truly a “joint” effort and I thank you for everything you have taught me about the Air Force and Army.

Jodi: Thank you Don, for your support and love throughout this whole school adventure. Amber and Jamie, it has been a truly interesting experience over the past few months. I appreciate the work effort and most of all, the chance to learn from you both.

Jamie: I would like to thank my wife, Susan, for her love and support. Garrett, my son, thank you for giving me a few breathers between sword fights and wrestling in order to work on this endeavor, your patience is duly noted. Last but definitely not least, I would like to thank my partners, Amber and Jodi, for having faith that we could answer such a daunting question and for always entertaining my suggestions and ideas with respect and kindness. Your professionalism, hard work, and honest (sometimes brutally) dialogue was invaluable and the sole reason for our success.

We would also like to thank Pam Silva, not only for her help with the processing of this thesis, but for giving us the freedom to make this Acknowledgements Page whatever we wanted it to be.

If you have gotten to this part of the page, we especially want to thank YOU, and we hope that you will read the rest of the thesis with as much interest and fervor as you surely must have if you have read all of this.

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

I'll be damned if I see the U.S. Army, its history, its doctrine, its institutions, alter just to win this lousy war.¹

Senior military commander, Vietnam

In the corporate world, there are many examples of how organizations stay true to their established routines for doing business (i.e., their strategies, structures and processes), in spite of changes in the competitive landscape of their industry. For instance, in the 1990s Eastman-Kodak senior executives might have felt the sentiments of the Vietnam commander quoted above, saying something like, “I’ll be damned if I’m going to let the digital camera boom distract me from being the leading producer of film in the world.” In fact, why should Eastman-Kodak’s leaders work to change its main production output from film to digital cameras? Current profitability had not declined, and Kodak’s leaders believed “that its legendary marketing could postpone the inevitable” switch from film to digital.² However, when profits suffered a ninety-three percent decline in 2001, Kodak did go into crisis mode and realized it had to discard its traditional film output in order to remain viable.³

Kodak subsequently went “all-in” to the digital camera market and emerged as a leader in the digital camera industry. But as a recent *BusinessWeek* article observed, Kodak’s future is far from certain. Profits from digital cameras are not nearly as favorable as those from film and processing services, and Kodak has yet to recover from eight consecutive quarters of hemorrhaging profits. In an effort to save the company, Kodak’s CEO determined it was time to change the business model that had sustained the company since 1880, as “many of Kodak’s problems can be traced to the successes of its past.”⁴ Kodak is learning the same lesson that the U.S. military in Vietnam learned:

¹ Michael Maclear, *The Ten Thousand Day War* (New York: Avon Books, 1981), 195.

² Steve Hamm and William C. Symonds, “Mistakes Made On The Road To Innovation,” *BusinessWeek*, November 27, 2006, http://www.businessweek.com/magazine/content/06_48/b4011421.htm (accessed January 17, 2007).

³ “Company News; Eastman Kodak Profits Fell 93% in 2nd Quarter,” *New York Times Magazine*, July 18, 2001, <http://query.nytimes.com/gst/fullpage.html?res=9A04EFD71F3BF93BA25754C0A9679C8B63> (accessed January 17, 2007).

⁴ Hamm and Symonds.

“Don’t confuse what your company does with how it does it.”⁵ That is, the business model (i.e., doctrine) and institutions that made Kodak successful are now hindrances to future success.

So how do an organization’s participants realize the need to change or adjust to meet the changed demands of the environment? And when people arrive at the realization of the need to change, how do they persuade others to take action in the same manner? In an unstable and complex environment, the need for constant change is often in conflict with the mechanisms that have been put in place to reduce uncertainty within an organization.⁶ The resistance created by this natural conflict may stifle change, leading to degraded performance or even extinction.⁷ To complicate matters, well-intended, reactive change may be instituted without regard for the second and third order effects that are generated. Luck prevails if these ordered effects do not adversely affect the outcome. More often than not, Murphy has his hand in the situation, and these effects are surprising and significant.

As exemplified by the Vietnam commander’s quote, “I’ll be damned if I see the U.S. Army, its history, its doctrine, its institutions, alter just to win this lousy war,” the United States military is not immune from organizational inertia. That commander is aware that those things he values are not going to help him win the war. More importantly, he is – astonishingly – willing to sacrifice this objective in order to preserve U.S. Army history, doctrine, and the institutions.

In short, the United States cannot afford to have its military fail. How do military leaders realize that their ‘business model’, the strategy, doctrine, and organizational structure that brought the military to this present state will not be the same as that which will further the United States’ security position in the future? Much like the situation that Kodak found itself in, it is possible that more than different military outputs may be required to operate in today’s environment. The military may need to adjust the means by which it achieves the desired ends.

⁵ Hamm and Symonds.

⁶ Erik Jansen, (class lecture, Organizational Design for Special Operations, Naval Postgraduate School, Monterey, CA, March 2006).

⁷ Edward E. Lawler III, *Built to Change* (San Francisco: Jossey-Bass, 2006), 11.

In this thesis, we explain how the military remains steeped in tradition and doctrine, causing it to struggle with the concept of change and impeding its embracing innovative strategies. Failure to generate ideas that allow the military to achieve the goals set by the civilian authorities has the potential to bring about the demise of the United States. Military leaders need to have a wealth of tools with which to accurately detect changes in their environment and then take appropriate measures to remain viable. The former chairman of the Joint Chiefs of Staff, General Richard B. Myers, stressed the need for this capability.

In today's world, there ought to be a premium for people who are thinking, innovative and are willing to take appropriate risks. If you don't try, and you stay locked in the doctrine that brought you there, you're going to fail. You are not going to be as good as you can be in terms of efficiency in the battlespace, and you're probably going to hurt your people. You've got to adapt.⁸

Observations like those of General Myers lead us to our research question: Why are military organizations resistant to change?

This thesis attributes the painstakingly slow change process to an insufficient framework for assimilating the relationships between the strategic, technological, doctrinal, and organizational components of the military's internal environment. A major by-product of this situation is a culture that holds organization and doctrine static, creating disequilibrium between the military and its external environment.

Militaries try to influence the external environment through changes in the strategic, doctrinal, and organizational areas. The difficulty lies in being able to frame the relevant environmental factors in such a manner as to be able to attain the desired end state without adverse affects in the other areas. As the environment becomes more complex and unstable, these tasks often appear to be insurmountable.⁹

⁸ Jim Garamone, "Myers: Changing Military Culture Key to Transformation," *DefenseLink*, October 6, 2004, http://www.defenselink.mil/news/Oct2004/n10062004_2004100603.html (accessed September 6, 2006).

⁹ Joseph E. McCann and John Selsky, "Hyperturbulence and the Emergence of Type 5 Environments," *Academy of Management Review* 9, no. 3 (1984): 460, <http://www.jstor.org/view/03637425/ap010035/01a00070/0> (accessed September 1, 2006).

In 1990, Peter Senge of MIT's Sloan School of Business popularized an approach that many claim enables organizations to cope with dynamic environments; the approach asserted that the solution was to become a learning organization. In his book, *The Fifth Discipline*, Senge defines the learning organization as one “where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together.”¹⁰ Drawing from concepts developed in management and social studies, he lists five “disciplines” that are integral to achieving this capacity and emphasizes the fifth discipline of systems thinking.¹¹ Senge provides many examples that show how people take action without consideration of how those actions will affect other parts of the organization. It is difficult to learn from these decisions because the effects of the actions take place in other parts of their environment.¹²

The idea of the learning organization is not new to the military. For example, in the 1996 book, *Hope Is Not a Method*, General Gordon R. Sullivan claims the army had made the transition to a learning organization. However, counter to General Sullivan’s views, Colonel Stephen J. Gerras argues that while the army espouses that it has become a learning organization, it has never made the cultural shift to truly exercise the disciplines that Senge put forth.¹³ In line with Gerras’ argument, we find that the military does not promote the five disciplines as a cohesive method for recognizing the need to change, and it neglects giving its members the tools to use systems thinking to frame the internal and external environment.

Overwhelming complexity in today’s environment makes the need for systems thinking ever more necessary. Systems thinking enables people to see interrelationships rather than linear cause and effect chains; to see processes of change rather than

¹⁰ Peter Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York: DoubleDay/ Currency, 1990), 3.

¹¹ For further information, see Chris Argyris and Donald A. Schon, *Organizational Learning: A Theory of Action Perspective* (Reading, Massachusetts: Addison-Wesley Publishing Company, 1978).

¹² Senge, *The Fifth Discipline*, 27-54; NOTE: Senge’s “Beer Game” is especially illustrative of these concepts.

¹³ Stephen J. Gerras, “The Army as a Learning Organization” (Master’s Thesis, US Army War College, March 3, 2002) <http://handle.dtic.mil/100.2/ADA404754> (accessed July 19, 2006).

snapshots frozen in time.¹⁴ Systems thinking allows members of an organization to dynamically frame its environment in order to use adaptively different strategies to accomplish goals. The old saying goes, “If the only tool you have is a hammer, every problem looks like a nail.” It is time for the military to assess the problem first and then determine if another tool needs to be created. Rather than try to apply its conventional hammer to every problem, members of the organization can use systems thinking as a framework to identify possible areas for change in order for the organization to remain viable in a dynamic environment.

In this thesis, we illustrate how systems thinking can provide a powerful framework for organizing environmental variables. In chapter two, we explore the definitions of change and systems thinking. In chapter three, we discuss how the so-called learning organization has been relegated to a catch all term by authors and military leaders alike. Not only has the military instituted the learning organization haphazardly, but the meaning of the learning organization is so diluted that it does not resonate with military members. The foundation of the thesis is based on two frameworks presented in chapters four and five. We present our prescriptive framework of military subsystems in chapter four. The prescriptive framework is derived from literature concerning military strategy, doctrine, and organizational theory. Here, we explain the desired relationships between the subsystems that the military has the power to change and those subsystems that are in the military’s external environment. In chapter five, we present our theoretical framework of how the military subsystems interact. This framework portrays how the military subsystems interact from our point of view. It highlights how change is normally carried out by the military, and we can then see the barriers the military faces while trying to achieve effective change. The systems thinking framework also helps to identify the leverage points within each system to implement effective change. In conclusion, military leaders need to cultivate systems thinking skills as a means to frame the environment to develop and carry out military strategy which will bolster our national security.

¹⁴ Virginia Anderson and Lauren Johnson, *Systems Thinking Basics: From Concepts to Causal Loops* (Waltham, Massachusetts: Pegasus Communications, Inc., 1997), 5-7.

THIS PAGE INTENTIONALLY LEFT BLANK

II. DEFINITIONS AND EXPLANATIONS

In order to present a clear picture of our concepts, we must first establish some working definitions. Specifically, we address the concepts of change, paradigms, open and closed systems, and systems thinking.

A. CHANGE

Webster's Dictionary defines change as something, "to make different in some particular" or "to replace with another".¹⁵ Dr. Andrew Van de Ven defines institutional change as "a difference in form, quality, or state over time in an institution."¹⁶ To determine if change has occurred, one has to take measurements of a particular set of variables at two different times, and determine if there is a difference between the two sets of data. Change occurs in the external and internal environment of an organization – organizational theorists claim it is an organization's goal to keep the internal changes at a pace close to that of the external changes.¹⁷

Change within organizations, including military organizations, occurs on a daily basis where members take deliberate action to solve problems that stem from a dynamic environment. To many within the organization this frequent attempt to change constitutes the change in its entirety – even though the variable that the change was directed at remains the same. To these people, accusations such as "the military is slow to change" seem incorrect. Yet according to Dr. Van de Ven's definition, the act of change does not constitute change itself; much less assure internal changes keep pace with external changes. In this sense, the word "change" is used with varying denotative meanings that tends to create confusion or a false sense of accomplishment.

Nadler and Tushman organize types of change according to two factors: whether the change is anticipatory or reactive and whether the change is incremental or strategic.

These types of change are depicted in Figure 1.

¹⁵ Merriam-Webster Online Dictionary, "Change," <http://www.m-w.com/dictionary/change> (accessed August 23, 2006).

¹⁶ Timothy J. Hargrave, and Andrew H. Van de Ven, "A Collective Action Model of Institutional Innovation," *Academy of Management Review* 31, no. 4 (2006): 866, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=22527458&site=ehost-live&scope=site> (accessed January 10, 2007).

¹⁷ Peter Senge et al., *The Dance of Change* (New York: Doubleday, 1999), 14.

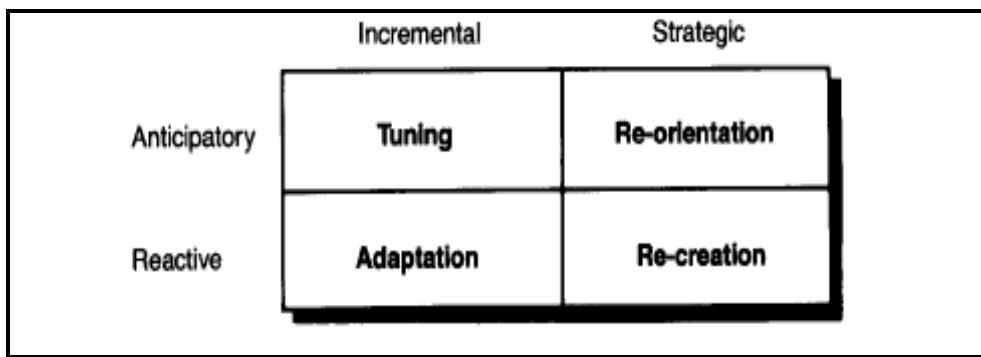


Figure 1. Types of Change¹⁸

Incremental changes can affect little or all of an organization, but they “usually occur within the existing definition and frame of reference of the organization.”¹⁹ Strategic change affects the whole of the organization and “fundamentally redefines what the organization is or its basic framework.”²⁰ Other organizational theorists categorize strategic change as “transformational change”. In his book, *Built to Change*, Edward Lawler explains that, “Transformational change is associated with fundamental shifts in the organization’s strategy, organization design, and processes.”²¹

There is consensus that strategic changes are necessary during the life span of an organization, yet these changes do not assure the longevity of the organization. “While strategic organization change does not guarantee success, those organizations that fail to change, generally fail to survive.”²² Lawler remarks that this type of change is “particularly likely to be inadequate, too late, or poorly managed.”²³

The reactive or anticipatory nature of action implies different risks for strategic change. Re-orientations are generally more successful, although there is greater risk associated with making strategic bets on the future. Re-creations are riskier overall

¹⁸ David A. Nadler and Michael L. Tushman, “Beyond the Charismatic Leader: Leadership and Organizational Change,” *California Management Review* 32, no. 2 (1990): 80, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=4762422&site=ehost-live&scope=site> (accessed January 10, 2007).

¹⁹ Nadler and Tushman, 79.

²⁰ Ibid.

²¹ Lawler, 11.

²² Nadler and Tushman, 80.

²³ Lawler, 11.

because they are enacted in crisis situations that involve time constraints. Also, because “re-creations almost always involve a change in core values” there is likely to be more resistance to change within the organization.²⁴

Allen Imershein applies Thomas Kuhn’s concept of “paradigm change” to organizational change.²⁵ This type of change is tied to the perceptions an organization holds. Kuhn claims that scientists act to confirm what they already know. A paradigm is a “universally recognized scientific achievement which for a time provides model problems and solutions to a community of practitioners.”²⁶ Those events that do not fit the discipline’s established paradigm (anomalies) often are ignored. It generally takes outsiders or newcomers to the established discipline, such as Albert Einstein in the physics discipline, to create a new way of making sense of the discipline’s problems, including the problematic anomalies. They are thus able to provide a challenge to the established paradigm. Once the members of the discipline accept the new paradigm, there is a fundamental shift in how scientists view the causal reason for events.²⁷ Kuhn’s work is significant in pointing out that even physicists, viewed as objective and open-minded in their observations and sense-making, have great difficulties in “getting out of the box” of their habitual ways of engaging problems.

Following Imershein, we can argue that actors in military organizations also share paradigms that they rely on to solve the problems that they face. Paradigms provide military professionals with ways of thinking, defining, and solving “model” problems. In the 2001 Quadrennial Defense Review, Donald Rumsfeld discussed the need for a “paradigm shift” within the Department of Defense.²⁸ According to Kuhn, individuals or organizations can not set out to change a paradigm in an intellectual vacuum. Individuals develop new paradigms because the existing mental models or theories can not make

²⁴ Nader and Tushman, 80.

²⁵ Allen W. Imershein, “Organizational Change as a Paradigm Shift,” *The Sociological Quarterly* 18, no. 1 (1977): 33-43, <http://www.blackwell-synergy.com/doi/abs/10.1111/j.1533-8525.1977.tb02160.x> (accessed January 10, 2007).

²⁶ Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1996), 10.

²⁷ Ibid., 6.

²⁸ Donald Rumsfeld, *Quadrennial Defense Review Report*, (Washington, DC: Department of Defense, September 30, 2001), 17, <http://www.defenselink.mil/pubs/qdr2001.pdf> (accessed February 28, 2007).

sense of what is happening and solve new problems. Even after “severe and prolonged anomalies”, experts are hard pressed to discount a paradigm.²⁹ It is evident that an organization must be sensitive to noticing and attributing these anomalies as such in order to spur a grand change.

Change processes are important to understand in order to implement effective change. However, the scope of this paper is limited to examining how systems thinking allows military organizations to recognize the need to change. As with the types of change, change processes in practice are complicated and take many forms. Van de Ven and Hargrave describe four models of institutional change: institutional design, institutional adaptation, institutional diffusion, and collective action. These models describe change processes that vary in the deliberateness of the change and who initiates the change.³⁰ Each step of these change processes needs to be successful for change to occur, yet each presents unique problems.³¹ Further research is necessary to determine how and by which processes to implement change within military organizations.

B. SYSTEMS THINKING

The interdependent nature of events in the Information Age makes systems thinking a critical tool for analyzing one’s environment. Rather than investigate components of the environment individually, systems thinking dictates the study of interactions between the components. This difference between traditional thinking and systems thinking makes it very effective for complex issues, issues that have dependence on the actions of others, and issues which stem from ineffective coordination of the people involved.³² Those in the military very often deal with these types of issues.

When using systems thinking, it is helpful to categorize one’s system as either relatively “closed” or “open”. In relatively closed systems, activities may be influenced by outside events, but there is little exchange of work between the unit and the outside

²⁹ Kuhn, 77.

³⁰ Hargrave and Van de Ven, 864-888.

³¹ Richard L. Daft, *Essentials of Organization Theory & Design* (Mason: South-Western College Publishing, 2003), 132.

³² Daniel Aronson, “Introduction to Systems Thinking,” *The Thinking Page*, 1996, http://www.thinking.net/Systems_Thinking/Intro_to_ST/intro_to_st.html (accessed February 5, 2007).

environment.³³ Relationships between variables are relatively easy to determine and are fairly predictable in nature. An organization can make changes within its boundaries and those changes will have little effect on the external environment.

On the other hand, actions in relatively open systems have an effect on an organization's external environment, and vice versa. Open systems consist of "a group of interacting, interrelated, or interdependent components that form a complex and unified whole."³⁴ Military members encounter open systems at the higher levels of the military bureaucracy as well as on the battlefield. Elliot Jaques describes levels within an organization based on the time it takes to complete tasks. When the time span is over five years, Jaques contends these individuals are operating in an open system.³⁵ In his view, this is the threshold at which variables from the external environment will have an effect on a particular project. For example, those involved on the budgetary process or working as a weapons system program manager operate in an open system.

The emerging threat of non-state actors offers an example of a particular type of open system called a complex adaptive system (CAS). A complex adaptive system is: self-organizing, adaptive, sensitive to initial conditions, and is vulnerable to minor events.³⁶ In his study of effects based operations, Dr. Edward Smith describes how CAS concepts describe the relationship between the United States and the insurgents within Iraq. Dealings between the two are related such that today's actions are shaped by past actions, which shape tomorrow's actions. As a result, "in a system of complex adaptive

³³ Daft, 6.

³⁴ Anderson and Johnson, 2.

³⁵ Elliott Jaques, "The Development of Intellectual Capability: A Discussion of Stratified Systems Theory," *Journal of Applied Behavioral Science* 22, no. 4 (1986): 366-7, <http://ft.csa.com/ids70/resolver.php?sessid=26o2351il0j5dri4o6nb3dcs34&server=www-md1.csa.com&check=5afc4435e9873611333b952e55fa1e40&db=sageman-set-c&an=10.1177%2F002188638602200402&mode=pdf&f1=0021-8863%2C22%2C4%2C361%2C1986> (accessed December 6, 2006).

³⁶ James N. Rosenau, "Many Damn Things Simultaneously: Complexity Theory and World Affairs," (paper, Conference on Complexity, Global Politics, and National Security, sponsored by the National Defense University and the RAND Corporation, Washington, DC, November 1996), <http://www.ndu.edu/inss/books/books%20%201998/Complexity,%20Global%20Politics%20and%20Nat'l%20Sec%20-%20Sept%2098/ch04.html> (accessed December 6, 2006).

systems, there can be no return to *status quo ante* because the very fact that a cycle has taken place alters the starting point for all succeeding cycles.”³⁷ This obviously has great implications when shaping strategy for future conflict.

If the military’s environment has the characteristics of a complex adaptive system, it is evident that systems thinking is another way for senior leaders to view their environment. Taking into consideration the interactions of organizational components, rather than focusing on just one, can set the stage for effective change actions. Oftentimes, problems in one area may be symptomatic of problems in another area. Systems thinking allows managers and leaders to identify these situations and identify leverage points for change actions. In any type of change, whether it is a Re-organization or Tuning, systems thinking provides a framework to categorize the variables within the dynamic environment the military works in today. This is the reason why Peter Senge includes it in his ‘five disciplines’ for a learning organization.

Senge’s claim that learning organizations “expand their capacity to create the results they truly desire” must be enticing to many organizations, not just the military.³⁸ Change is difficult in any organization, much less the bureaucratic behemoth of the U.S. military. The next chapter discusses the reasons why and how elements of the U.S. military implemented the disciplines of the learning organization.

³⁷ Edward A. Smith, *Complexity, Networking, and Effects-Based Approached to Operations* (Washington, DC: CCRP, 2006), 16-18, http://www.dodccrp.org/html3/pubs_download.html (accessed October 3, 2006).

³⁸ Senge, *The Fifth Discipline*, 3.

III. THE LEARNING ORGANIZATION IN REVIEW

A. OVERVIEW

When analyzing why military leadership chose the learning organization as the conceptual tool to facilitate change, it is important to first understand the roots of the concept. This chapter begins with the conceptualization of the learning organization as expressed by organizational theorists and both former and current military commanders. Then, we examine the military's interpretation of the concept through the framework of the learning organization.

B. THE CONCEPTUALIZATION OF THE LEARNING ORGANIZATION

The learning organization is a concept that has developed out of the research of many organizational theorists. Donald Schön provided a framework for the idea of a “learning system”: a system capable of continuous transformation, based on the idea that with increasing change comes a greater need for learning.³⁹ Eric Hoffer emphasized this point:

It is indeed remarkable how many of our present difficulties would be mitigated or even removed in a learning society.... [A] learning society would have a decided advantage in a time of rapid change: while the learned usually find themselves equipped to live in a world that no longer exists, the learner adjusts himself readily to all sorts of conditions.⁴⁰

Schön, along with Chris Argyris, went on to publish both *Organizational Learning: A Theory of Action Perspective* (1978), and *Organizational Learning II: Theory, Method, and Practice* (1996), works that have proven critical to gaining an understanding of learning within organizations. In 1987, Bob Garratt coined the term “learning organization” to describe simply an organization that stressed the need for collective learning.⁴¹

³⁹ Donald Schön, *Beyond the Stable State: Public and Private Learning in a Changing Society*, (Harmondsworth: Penguin, 1973), 28.

⁴⁰ Eric Hoffer, *In Our Time* (New York: Harper and Row, 1977), 29-30.

⁴¹ Bob Garratt, “The Learning Organization 15 Years On: Some Personal Reflections,” *Emerald Journal: The Learning Organization* 6, no. 5 (1999): 202, <http://www.emeraldinsight.com/Insight/ViewContentServlet?Filename=Published/EmeraldFullTextArticle/Articles/1190060501.html> (accessed on February 20, 2007).

It is with this background that Peter Senge began to formalize the concept of the learning organization. In his book, *The Fifth Discipline*, he constructed a framework for the learning organization. For an organization to be flexible, adaptive and productive in order to excel, he argues that organizations need to “discover how to tap people’s commitment and capacity to learn at *all* levels.”⁴² He stresses that it is not just learning for survival but “generative learning” that enhances an organization’s capacity to create and sustain its ability to learn. In fact, Senge goes so far as to say that, “the rate at which organizations learn may become the only sustainable source of competitive advantage.”⁴³ It may be this latter statement that made the idea so intriguing to the military.

C. THE U.S. MILITARY’S INTERPRETATION

Since *Joint Vision 2020* and other documents have expressed the need for the military to be more flexible and adaptable, it is clear why the military has adopted the learning organization as its conceptual tool. Yet the lack of success with implementation begs the question: What does the military think a learning organization truly is? In a master’s thesis regarding the U.S. Army in the Philippine War (1899-1902), Major Abb concluded that:

Training and Doctrine Command (TRADOC) Pamphlet 525-5, Force XXI Operations (1 August 1994), states the US Army must continually seek to operate as a learning organization... However the [U.S.] Army has not elaborated on what it truly means to practice the art of a learning organization within the military realm, nor has it established a doctrine on how to bring about a military learning organization...⁴⁴

General Schoomaker himself has used the concept in briefs to the House Committee for Armed Services, and he has supported further research on the topic. General (Ret) Gordon Sullivan and his consultant Michael Harper wrote their book, *Hope is Not a Method*, in the wake of the U.S. Army’s major transformation in the 1990s. In this book, they claim that “the army has transformed itself into a learning organization,

⁴² Senge, *The Fifth Discipline*, 4.

⁴³ Ibid.

⁴⁴ Madelfia A. Abb, “Bringing About a Military Learning Organization: the U.S. Army in the Philippine War, 1899-1902,” (Master’s Thesis, U.S. Army Command and General Staff College, February 18, 2000), 3, <http://handle.dtic.mil/100.2/ADA383682> (accessed on July 19, 2006).

maybe the foremost learning organization in the world.”⁴⁵ Richard Downie examines learning within the military by examining three case studies to compare and contrast change in doctrine. These cases include the U.S. Army counterinsurgency doctrine in Vietnam, El Salvador and the Army’s counter-drug doctrine. The most recent discussion of the learning organization within the military comes from John Nagl’s book, *Learning to Eat Soup with a Knife*. Nagl looks at two different case studies, the U.S. in Vietnam and the British in Malaya. He explains the ways that each learned or didn’t learn during their counterinsurgency efforts concluding that the British military is a learning organization while the U.S. military is not.

Examination of this research illustrates that there is a need for a tool to help the military cope with its environment and the army has selected the learning organization as the tool. In addition to the Army, organizations within the Air Force have adopted the learning organization concept. But is it the right tool for the military as a whole? Has the army chosen the right one? The following section seeks to answer these questions. First, we explain the difference between Organizational Learning and the learning organization and the significance of this difference. Second, we analyze the learning organization framework as it applies to the military. Finally, we provide an in depth look into the concept of systems thinking.

D. THE LEARNING ORGANIZATION VS. ORGANIZATIONAL LEARNING

Critics of the learning organization, such as Matthias Finger and Silvia Burgin Brand, argue that the learning organization concept is still very vague.⁴⁶ And there is still constant debate as to the distinction between the concept of Organizational Learning and a learning organization, since one is founded on the other. Ang and Joseph distinguish the two in terms of “process versus structure.”⁴⁷ In his own literature review, Anders Ortenblad supports this argument:

⁴⁵ Gordon R. Sullivan and Michael Harper, *Hope is Not a Method* (New York: Random House, 1996), ix.

⁴⁶ Matthias Finger and S. B. Brand, “The Concept of the ‘Learning Organization’ Applied to the Transformation of the Public Sector,” in *Organizational Learning and the Learning Organization*, ed. Mark Easterby-Smith, John Burgoyne and Luis Araujo (London: Sage, 1999), 147.

... The two most common ways to distinguish between organizational learning and learning organization in existing literature are that learning organization [sic] is a form of organization while organizational learning [sic] is activity or processes (of learning) in organizations, and that learning organization needs efforts [sic] while organizational learning exists without any efforts.⁴⁸

This understanding, however, has yet to permeate through the military. A review of Sullivan and Harper's, *Hope is Not a Method*, illustrates an example of this confusion. Sullivan and Harper introduce change as having a "dual nature": both a condition and a process. As a condition it is external and must be accepted as natural; as a process it is internal and is "ours to influence."⁴⁹ Their concept of change as a process runs parallel to that of Ang and Joseph's description of Organizational Learning.

However, Sullivan and Harper's fundamental argument to why the army is and has been a learning organization is founded solely around particular learning processes; specifically, the implementation of the After Action Reviews, or AARs. There are three questions asked in an AAR: What happened? Why did it happen? What should we do about it? It is with these questions, they argue, that the Army has a tool to assist in the learning process. It is a structured feedback process that is supposed to be open, all inclusive, and painfully honest. By way of incorporating the fundamental elements of trust and feedback to foster participation and innovation, it is possible to learn from each situation.⁵⁰ In essence, AARs are an effective tool to facilitate Organizational Learning but are not enough to declare the group to be a learning organization. In their article "Adapt or Die", Brigadier General Fastabend and Robert Simpson address how this is true, but note that it has not permeated up and down the organization's hierarchy.

⁴⁷ Soon Ang and Damien Joseph, "Organizational Learning and Learning Organizations: Trigger Events, Processes, and Structures," (paper, Academy of Management Meetings, Cincinnati, OH, August 1996), <http://www.ntu.edu.sg/home/adjoseph/Webpages/Publications/aom10.pdf> (accessed on February 2, 2007).

⁴⁸ Anders Ortenblad, "On Differences between Organizational Learning and Learning Organization," *Emerald Journal: The Learning Organization* 8, no. 3 (2001): 126, <http://www.emeraldinsight.com/Insight/ViewContentServlet?Filename=Published/EmeraldFullTextArticle/Articles/1190080304.html> (accessed on April 17, 2006).

⁴⁹ Sullivan and Harper, 155.

⁵⁰ Ibid., 200-3.

... It is difficult to overstate the impact of the AAR on the Army. It is such an important part of the warfighting culture today that we forget it is relatively new. Its strength is derived from the inclusion of the entire team in the process, its “no-holds-barred” honest self-criticism and its ubiquity. Although widely embedded in our tactical training, Army institutional processes have not incorporated AARs to the same extent. To create a culture of innovation in the institutional Army requires that horizontal and vertical AAR processes be integrated into normal office battle rhythms, just as they exist as a normal part of all training.⁵¹

This incorporation of AARs into the army’s culture and institution is the effort that is required in truly becoming a learning organization. Sullivan and Harper provide clear evidence of the military’s capacity for organizational learning. However, the claim that the U.S. Army is the “foremost learning organization” is far from accurate. The reliance on the AAR “process” only provides one piece of the puzzle when trying to grow a true learning organization and structure.

Nagl’s work provides another example of how the terms Organizational Learning and the learning organization have been used incorrectly. In his first chapter, Nagl uses Richard Downie’s definition for change: “a process by which an organization (such as the U.S. Army) uses new knowledge or understanding gained from experience or study to adjust institutional norms, doctrine and procedures in ways designed to minimize previous gaps in performance and maximize future successes.”⁵² He then defines another key term he calls institutional memory as “the conventional wisdom of an organization about how to perform its tasks and missions.”⁵³ Using these two definitions, he concludes that it is in doctrine that the army codifies its institutional memory, and he claims the “published nature” of this doctrine is “convincing evidence of change.”⁵⁴ He also says that learning is demonstrated through curricula in military schools and Lessons Learned published by “flexible, responsive military institutions.”⁵⁵ In the end both

⁵¹ David A. Fastabend and Robert Simpson, “The Imperative for a Culture of Innovation in the U.S. Army: Adapt or Die,” *Army* 54, no. 2 (February 2004): 21, <http://www.ausa.org/webpub/DeptArmyMagazine.nsf/byid/CCRN-6CCSBU> (accessed on April 18, 2006).

⁵² Richard D. Downie, *Learning from Conflict: The U.S. Military in Vietnam, El Salvador, and the Drug War* (Westport, CT: Praeger, 1998), 22.

⁵³ John A. Nagl, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam* (Chicago: University of Chicago Press, 2005), 6.

⁵⁴ Nagl, 7.

⁵⁵ Ibid.

military curriculum and lessons learned contribute significantly to the development of military doctrine. He claims the process of doctrinal change he provides is an efficient way to track the development of learning in military organizations. Nagl uses his process to determine if the British and United States' militaries were learning organizations. His results are interesting, suggesting that after a key turn in 1952, the British *did* show signs of organizational learning by accepting new forms of warfare to gain the advantage and eventually maintaining a successful counterinsurgency campaign. On the other hand, the Americans, although technologically innovative throughout the campaign, never truly "learned" what was necessary in order to be successful. His conclusion then is that the British Army in Malaya, was a learning organization but the U.S. Army in Vietnam was not.

Given the difference between the two terms, the process of Organizational Learning is evident. However, there is no evidence that there is structure or a continuation of efforts that shows the British Army *was* a learning organization. With regard to the methodology of using case studies to determine if a military organization *has been* a learning organization, it is important to be aware that the case studies are a snapshot in time. Major Abb's study of the U.S. Army in the Philippine War through the framework of the learning organization comes closer to proving that more than just organization learning has occurred. Yet her conclusion still is limited by the fact that her analysis only covers the three years of conflict.⁵⁶

What do these studies tell us about our army now? The *sustained* ability to learn and adapt to change is fundamental to being a learning organization. And for the purposes of classifying a group as a learning organization, evidence of Organizational Learning is not enough. We can not say that the U.S. Army was not a learning organization in Vietnam, but was one in the Philippines. The fact that learning occurs during these case studies does give hope, since the fundamentals, the processes, such as AARs, are there. However, as Sullivan states, "Hope is Not a Method."

⁵⁶ Abb, 12.

E. LEARNING ORGANIZATION FRAMEWORK – THE FIVE DISCIPLINES

The following section extrapolates Senge's Five Disciplines of the learning organization and examines if and how the military has put them into practice.

PERSONAL MASTERY – Clarifying and deepening personal vision
SHARED VISION – Create vision of future to create the need for change
TEAM LEARNING – Overcome fear of conflict to challenge others' thinking
MENTAL MODELS – Models to overcome ingrained assumptions which influence perception
SYSTEMS THINKING – Contemplating the whole, not just one part

Figure 2. The Five Disciplines of a Learning Organization⁵⁷

1. Personal Mastery

Inherent to the learning organization is a shift in our way of thinking; one needs to be willing to see things from a different perspective and be open to deficiencies and criticisms. Personal mastery is the discipline of “continually clarifying and deepening our personal vision, of focusing our energies, of developing patience, and of seeing reality objectively”⁵⁸ This discipline is already fundamental to the military organization partly through education and intensive job training. Yet there is a need for more than just a focus on experts in the field. Personal Mastery requires critical thinkers willing to commit to this shift of mind. A majority of military personnel are educated and advanced by the military organization. Postgraduate education is required for promotion to senior ranks throughout the services. However, the content and scope of this education, as well as its availability, call into question the true significance of intellectual capital in the military.

The value that the officer corps places on intellectual development of their junior and senior officers is critical to understanding the system they operate in. While in the aftermath of World War I, the U.S. military began a serious study of the profession of

⁵⁷ Senge, *The Fifth Discipline*, 5-11.

⁵⁸ Ibid., 114.

arms. “The American Expeditionary Force (AEF) established twenty separate boards to examine the lessons of the war... a considerable effort to come to grips with the harsh lessons of the Western Front.”⁵⁹ Today this continues through the service schools and Knowledge Management tools such as the Army Knowledge Online website.

Though it is extremely important for military personnel to gain operational experience in the form of combat, tactical training, and specific unit assignment, intellectual development outside the unit is becoming less and less a priority. Because of the Global War on Terror (GWOT), we are beginning to see a conflict between the time available for an officer to immerse herself in intellectual study and the time required in a “muddy boot” billet. According to Murray and Millet, “the Naval War College remains the finest institution of its kind in the world, but unfortunately the navy still resolutely refuses to send its officers to school.”⁶⁰ In order to achieve Personal Mastery as a discipline, this needs to be corrected.

This lack of emphasis is seen throughout the naval ranks. Surface Warfare Officers in the Navy, desiring a non-technical curriculum at the Naval Postgraduate School, now have to compete for their assignment.⁶¹ These non-technical curriculums include the MBA program and National Security Affairs. There is no contention that there will always be value in our naval leaders to have the technical expertise to understand the platform upon which they serve. Yet upon graduation, these men and women will not be judged so much on their knowledge of engineering or computers but on how they lead, manage, and make decisions. Obviously, the military needs both kinds of people within its ranks. However, the military underestimates the time and deliberateness required in order to cultivate and breed critical thinkers. The military also displays this attitude towards the instructor corps of professional military education. Colonel Robert Killebrew argues that “a teaching assignment at a service school should -

⁵⁹ Williamson Murray, “Does Military Culture Matter?” *Orbis* 43, no. 1 (Winter 1999): 34, <http://www.sciencedirect.com/science/journal/00304387> (accessed on February 20, 2007).

⁶⁰ Richard R. Muller, *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan R. Millett (New York: Cambridge University Press, 1996), 147.

⁶¹ U.S. Navy Personnel “NPS Non- Technical Curricula Slating,” Surface Warfare Battle Admin Section, *Bureau of Naval Personnel*, <http://www.npc.navy.mil/Officer/SurfaceWarfare/BattleAdmin/NPS+Non-Technical+Curricula+Slating.htm>. (accessed on February 4, 2007).

must - be once again a prestigious and career-enhancing assignment in the services.”⁶² The military organization's desire to decrease the number of civilian instructors in order to purchase sophisticated computer systems, and its desire to decrease the time officers spend in the institutions, “reflect the attitudes of both the larger military culture and society: profoundly anti-intellectual.”⁶³ This will lead to a decrease in intellectual capital. As a result, military organizations become less capable or likely to shift or develop alternative strategies before, during, or after conflict. A serious practice in Personal Mastery and an investment in intellectual capital within military organizations will pay large dividends in adaptation, flexibility, and innovation of the force. The upsetting possibility is that the military may be waning in its profession of arms, when our nation needs its military leaders to reclaim the intellectual high ground the most, due to an ever changing threat environment.

2. Team Learning

The discipline of Team Learning is viewed as “the process of aligning and developing the capacities of a team to create the results its members truly desire.”⁶⁴ This discipline starts with the capacity of members of a team to suspend assumptions and enter into a genuine thinking together. Senge calls this collective thinking “dialogue”.⁶⁵

In 1994, General Sullivan challenged the Commandant of the U.S. Army War College (USAWC) to become the model learning organization for the army. Colonel Peter Bucha in his thesis, *The US Army War College: A Model Learning Organization for the Army?*, uses a survey and his understanding of Senge's Five Disciplines to determine what progress had been made since this challenge. His thesis has two objectives: “to provide insight as to whether the USAWC is perceived to be a model learning organization” and “to identify traits of the Army War College that are both consistent and inconsistent with the traits of a learning organization.”⁶⁶ This evaluation is not

⁶² Robert Killebrew, “Why Doctrine Matters and How to Fix It,” *Armed Forces Journal* (October 2006), 9, <http://www.afji.com/2006/10/1891482/> (accessed on November 1, 2006).

⁶³ Muller, 148.

⁶⁴ Senge, *The Fifth Discipline*, 236.

⁶⁵ Ibid.

⁶⁶ Peter Bucha, “The U.S. Army War College: A Model Learning Organization for the Army?” (Master’s Thesis, U.S. Army War College, April 9, 1996), 4, <http://handle.dtic.mil/100.2/ADA309579> (accessed on July 19, 2006).

representative of the army as a whole, but it does illustrate the need for a synergy of all the disciplines and how the lack thereof affects the learning process.

Students, faculty and the leadership were surveyed randomly for both quantitative and qualitative responses. Respondents were given the definition of a learning organization and asked to name three traits that were consistent with the definition and three traits that were inconsistent with the definition. According to the students and faculty, consistent traits were: “seminar or Team Learning,” and “open, honest and non-judgmental atmosphere.”⁶⁷ In some respects Team Learning, as well as Personal Mastery, seem to be something that comes easily to the military. However, these capabilities are insufficient – although necessary – for a learning organization.

3. Building Shared Vision

Shared vision is “the capacity to hold a shared picture of the future we seek to create.”⁶⁸ When there is this genuine vision, people excel and learn, not because they are told to, but because they want to. However, in the military many leaders have personal visions, or “vision statements”, that are never translated into shared visions that galvanize an organization.

Colonel Bucha’s study showed that the discipline of building shared discipline was not evident from the perspective of the USAWC students and faculty. The traits that were inconsistent with Shared Vision were: “top-driven requirements”, “too much conflict between departments” and the “dissynchronization between leadership/academic board and the seminar learning”.⁶⁹ With the exception of traits such as the commandant’s vision/ future focus, collegiality, and the ability to create, experiment, and discover, the leadership observed additional inconsistencies such as “conflict between departments” and “too many top driven requirements”.⁷⁰ In this case, the vision of the commandant was not enough to facilitate sharing throughout the organization.

In his testimony before the House Armed Services Committee, General Schoomaker gave insight to this topic:

⁶⁷ Bucha, 21.

⁶⁸ Senge, *The Fifth Discipline*, 9.

⁶⁹ Bucha, 22.

⁷⁰ Ibid.

The strength of a football team is not the play that is called in the huddle and how well everybody knows the playbook. The strength of the team is when you get to the line of scrimmage and the ball gets snapped, what happens when everything changes? That is the difference, and that is the kind of Army we need. We have to have a common basic starting point, but, boy, once the ball has snapped, you know, we have to have people that understand the intent, understand what the end state is supposed to be and understand how they can contribute.”⁷¹

This “common basic starting point” that he speaks to is the shared vision that is needed not only in the Army but throughout the entire military system.

4. Mental Models

Mental models are “deeply ingrained assumptions, generalizations, or even pictures and images that influence how we understand the world and how we take action.”⁷² In a military organization our mental models are more than deeply ingrained. They come to us in the form of our core values, our codes of conduct, and even in doctrine. This discipline allows us to “turn the mirror inward,” realize our models and assumptions, and hold them to the closest of scrutiny.⁷³

These models however can be a benefit or a hindrance to how the military views doctrine, strategy and even its own organization. Sullivan and Harper suggest the concept of doctrine as “an engine of change” to support how the Army was able to come up with new ideas on how to fight. Sullivan and Harper define this doctrine as “not *what* to think, but *how* to think”; because of the competitive nature of its missions and the dynamics of its environment, the military is forced to constantly reevaluate how it operates.⁷⁴ It is this aspect of doctrine that proves learning occurs within the military.

In theory, doctrine as an engine of change works, but there is a danger that doctrine may get set in stone. If doctrine is to guide the military in “how to think,” certain mental models can form such as “find, fix and finish”. The tendency is to fit the problem to that doctrine well before realizing that it may be the doctrine that needs to be

⁷¹ Peter Schoomaker, U.S. Congress, House, Committee of Armed Services, *Hearings on Army Transformation*, 108th Cong., 2nd sess., July 15 and 21, 2004, 61.

⁷² Senge, *The Fifth Discipline*, 8.

⁷³ Ibid., 9.

⁷⁴ Sullivan and Harper, 10.

changed. By scrutinizing these mental models with respect to the current environment, it allows for a critical look as to whether these models are hindering or enabling the success of the overall mission.

Evidence of each of the disciplines described above can be seen in the military. Some are in practice more so than others with varied success. One example of successful implementation of the whole learning organization concept is Seattle's Engineer District. The Engineer District's competitive environment and restrictions on military and civil construction budgets had forced it to adapt to these new changes. Lieutenant Colonel Rigsby evaluates this organization to show how the district operates and truly learns in order to manage their changes. He concludes:

It is clearly evident that the elements of the five disciplines of a learning organization are present in the Seattle District. But this does not mean that the District is now a learning organization. ...Learning organizations must always keep learning. It is about becoming, not being. It is a journey, not a destination.⁷⁵

For the learning organization concept to be offered as a solution, it would seem only right that it be something achievable in order to be successful. Major Abb argues that the learning organization is “the key to achieving desired outcomes in all spectrums of military operations in the 21st century.”⁷⁶

These four “core” disciplines provide even more evidence as to why the military, the Army especially, finds the learning organization such an attractive concept. However, these disciplines by themselves practiced inconsistently and individually, fall short of what could be achieved if they were incorporated systematically. According to Lieutenant Colonel Gerras,

...although the Army has been at the forefront of instituting processes to facilitate organizational learning, at the end of the day the Army is not a learning organization, and more importantly, we don't really understand what one looks like or more significantly, how to get there.⁷⁷

⁷⁵ Mike Rigsby, “The Learning Organization: Concept and Application,” (master’s Thesis, U.S. Army War College, April 15, 1997), 26, <http://handle.dtic.mil/100.2/ADA326355> (accessed on July 19, 2006).

⁷⁶ Abb, ii.

⁷⁷ Gerras, 1.

Understanding how to get there comes with an understanding of what Senge calls the Fifth Discipline, Systems Thinking. It is this discipline and approach that provides the synergy of a learning organization. “It is the discipline that integrates the others, fusing them into a coherent body of theory and practice.”⁷⁸ This shift in focus is the cornerstone in understanding how the military can recognize the need for change and affect that change to optimize its performance in the ever-changing threat environment. But this concept is not yet fully understood or developed within the military as a whole.

5. The Fifth Discipline- Systems Thinking

One organization in the military has taken great strides in order to be successful in becoming a learning organization. In the last few years, the U.S. Army Corps of Engineers (USACE) has made both tremendous organizational and process changes to remain “relevant, ready, responsive and reliable” in their service.⁷⁹ They argue that:

Given the dramatic changes in our national requirements, the dynamic shifts in national perspectives, the prominence of knowledge and service as the core of today's work, and the vast uncertainties before us - if we can only have one skill in the future, then it must be the ability to learn effectively and efficiently.⁸⁰

The Chief of Engineers has challenged the leaders within the Corps to become “rabid advocates of a learning organization”.⁸¹ In doing so they have found that this requires a change in their culture. However, unlike many who have previously come to this conclusion, they understand what this change entails. Their talking points provide us with this insight: “Changing our culture is all about changing our fundamental organizational behavior – how we collaboratively do our work.” At the level at which they operate this is the type of systems thinking that is necessary. They even have developed their own learning organization doctrine that takes the ideas of Senge’s disciplines, but they have tailored it for their own organization. In addition they use McKinsey’s 7-S systems model of organizations to “focus on the interactions of all

⁷⁸ Senge, *The Fifth Discipline*, 12.

⁷⁹ “Who we are,” Strategic Direction/Vision Page, *U.S. Army Corps of Engineers*, <http://www.hq.usace.army.mil> (accessed on February 2, 2007).

⁸⁰ “Learning Organization: Roadmap to Transformation,” Talking Points Section, *U.S. Army Corps of Engineers*, <http://www.hq.usace.army.mil/cepa/learning/talking.htm> (accessed on February 2, 2007).

⁸¹ “Learning Organization: Roadmap to Transformation,” FAQ Section, *U.S. Army Corps of Engineers*, <http://www.hq.usace.army.mil/cepa/learning/faq.htm> (accessed on February 2, 2007).

organizational parts, and to align all parts with the corporate ideal future design".⁸² As recently as August 2006, the USACE has implemented its twelve Actions for Change, of which eight are focused on effectively implementing a comprehensive systems approach.⁸³

In short, the USACE not only has recognized the need for change within its organization but has taken great steps to implement this change. They have labeled what they are doing as becoming a learning organization. This includes practicing the Five Disciplines and taking a comprehensive approach to understanding their role in service to the Army and the rest of the world. This understanding has come from embracing a systems approach.

The first law of systems thinking is: "Today's problems come from yesterday's solutions."⁸⁴ Looking at past solutions critically via systems thinking can illustrate how the military's commitment to past successes could be the source of the resistance to change.

In his book, *Learning from Conflict*, Downie argues:

That to explain doctrinal change a theory must account for the dynamic relationship involving both the external influences that make doctrinal change necessary and a military's institutional response to those influences.⁸⁵

He suggests that doctrine can be evidence of change, but he says that it is insufficient proof. According to his definition this change must have resulted from a deliberate process that was aimed at improving the organization's performance.⁸⁶ He found that the Army did not learn or improve its doctrine in either of the counterinsurgency cases he examined. He stresses, as many others have, that due to the failure in Vietnam, changes in doctrine should have been expected or at least

⁸² "Learning Organization: Roadmap to Transformation," FAQ Section, *U.S. Army Corps of Engineers*.

⁸³ "News Room: Corps Points," *U.S. Army Corps of Engineers*, <http://www.hq.usace.army.mil/cepa/corpspoints/8-25-06.htm> (accessed on February 2, 2007).

⁸⁴ Senge, *The Fifth Discipline*, 57-58.

⁸⁵ Downie, 2.

⁸⁶ Ibid., 109.

considered.⁸⁷ However, there were none. He does show, however, that there was institutional learning in regard to the counter-drug doctrine used by the U.S..

To explain the reason why there was learning in some instances but not in others, he uses three theories: the Balance of Power Theory (from Posen), Organizational Theory, and Institutional Learning Theory; the latter parallels Argyris and Schon's concept of Organizational Learning. Using the Institutional Learning Theory, he argues that a blocked institutional consensus, an incomplete learning cycle, and a creation of organizational defenses that prevented learning in the counterinsurgency cases.⁸⁸ With respect to the counter-drug doctrine, the army did learn. Downie suggests that none of these theories sufficiently explained the change; rather, it is the relationship between the external conditions creating the need for change and the institutional factors that facilitate this change. In short, the explanation requires systems thinking. According to the National Defense University, the Systems paradigm:

...should be viewed as a tool that leaders can use to design their organization's capability to: (1) analyze tactical and strategic environments; (2) develop and enact strategies in response to environmental demands; and, (3) sustain an adaptive and productive organizational culture.⁸⁹

For the military to achieve the flexibility that it desires, it should continue to remain focused on its learning capabilities as this concept is still extremely important. However, in order to understand how to recognize the need and affect change, the systems thinking approach is necessary.

F. SUMMARY

The U.S. Army, as a service, claims that the learning organization is the solution for coping with its dynamic environment. But through the iterations discussed, it has become bastardized to the point of misuse. Several Air Force organizations have come to the same conclusion. However, the Navy has remained deeply rooted in tradition with

⁸⁷ For more information on these arguments see Andrew F. Krepinevich, Jr., *The Army and Vietnam* (Baltimore: Johns Hopkins University Press, 1986), Harry G. Summers Jr., *On Strategy: A Critical Analysis of the Vietnam War* (New York: Random House, 1982) and Nagl.

⁸⁸ Downie, 173.

⁸⁹ National Defense University, Strategic Leadership and Decision Making Section on "Systems Thinking and Learning Organizations," *Air University*, <http://www.au.af.mil/au/awc/awcgate/ndu/strat-lr-dm/pt1ch4.html>. (accessed on January 25, 2007).

little dialogue as to the learning organization's viability. It is purpose of this thesis to provide a way of thinking that allows the military as a whole to realize the need for change sooner. Peter Senge's concept of the learning organization could assist in this capability. Yet due to its continuous misuse and misconception, it too has become a hindrance; merely becoming another obstruction in the quest to understand the relationships within the military system.

It is the purpose of the next two chapters to introduce two frameworks for the military, one prescriptive and one theoretical. These frameworks were created with an emphasis on the military as a system and the interactions of each of its subsystems among themselves and with their environment. The focus is not on the military as a learning organization, but rather, using the systems approach in order to determine what drives the need for change in the military and why there is resistance once a need to change is identified.

IV. A PRESCRIPTIVE FRAMEWORK OF THE MILITARY SYSTEM

In the midst of day-to-day operations in the bureaucratic jungle, it is helpful to get your head above the trees every so often to see where these daily operations are guiding the organization. Systems thinking raises one's view in just this manner. Applying this concept, in this chapter we translate the literature on military strategy, doctrine, organization, technology, and culture as they interact with each other and the external environment to build a prescriptive framework of military subsystems. This framework allows us to see the potential relationships between the strategic, doctrinal, and organizational subsystems which the military can influence. Following that, we discuss each component of the system and analyze the relationships between each subsystem. Although this framework is not inclusive of every factor affecting military strategy, it remains a powerful approach to understanding the components involved in creating strategy.

A. THE PRESCRIPTIVE FRAMEWORK

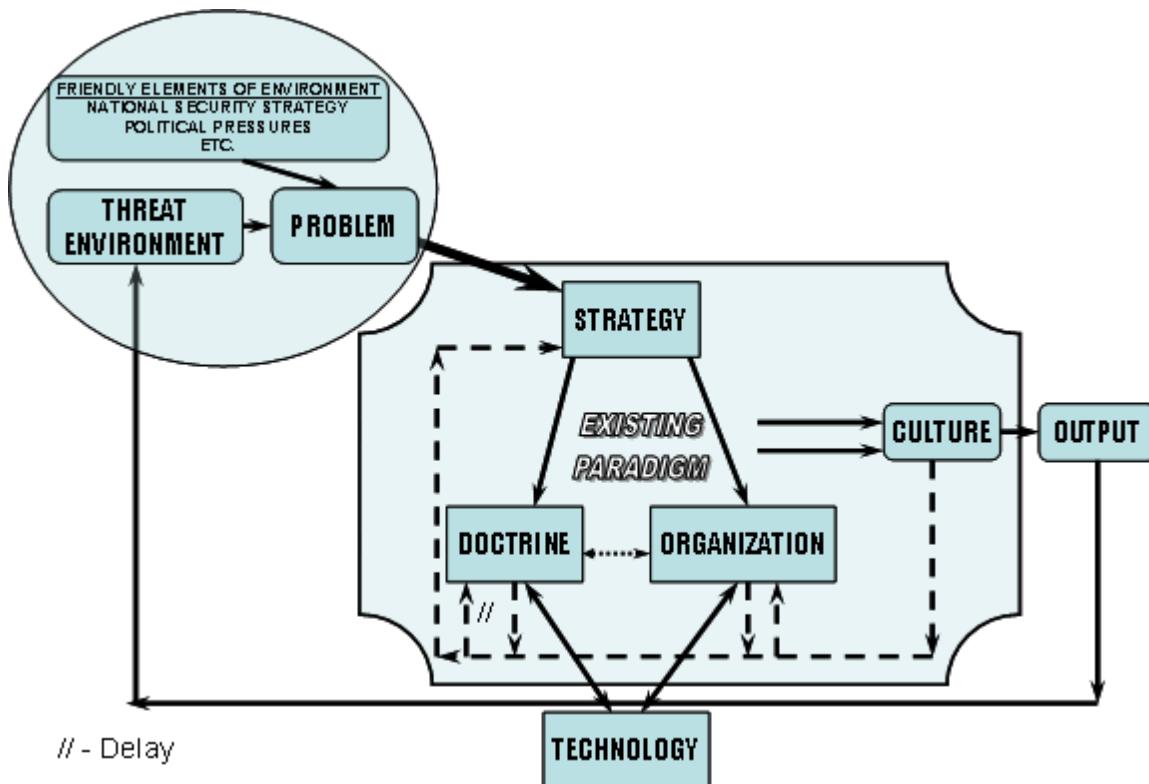


Figure 3. The Prescriptive Framework of Military Subsystems

Figure 3 depicts an open system consisting of several components. Those elements in the blue circle and the technology box represent the components that are in the military's external environment. Included are elements such as the U.S. political system as well as the threat environment. The military affects the external elements, but there are other factors that may have more of an effect than the U.S. military. In our prescriptive framework for military subsystems problems arise from these external elements. Those elements within the 'existing paradigm' box are components of the military's internal environment. These subsystems are affected by the external environment, but the military organization generally has the greatest effect. Culture is an emergent product of the military's internal environment. The military has the ability to affect culture, but as it is an emergent product, cultural change is seen only after changes are made in the internal environment.⁹⁰ The activities of the military's internal environment generate outputs. The dashed lines represent feedback from one component to another. The arrows indicate direct flow of influence from one component to another. Notice some components are directly connected, while some components influence others via a third component. The relationships between components (i.e., arrows and dashed lines) were garnered from literature that we will present in the following subsections.

There are three components the military has the ability to change at will: the strategic, doctrinal, and organizational subsystems. "Strategy is a plan for interacting with the competitive environment to achieve organizational goals."⁹¹ Military strategy deals with the broad scope of how power is used in coordination with other elements of statecraft in order to eliminate the threat or solve the problem. As seen in Figure 3, the subsystems that affect military strategy are the external environment, technology, doctrine, and organization. Technology affects the context of how the military components interact with the external environment due to the interaction of new equipment and operational procedures.⁹² Technological change may greatly affect

⁹⁰ Nancy Roberts, (class lecture, Coping with Wicked Problems, Naval Postgraduate School, Monterey, CA, Fall 2006).

⁹¹ Daft, 20.

⁹² Alan Beyerchen, *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan R. Millett (New York: Cambridge University Press, 1996), 268.

military strategy because it can spur a new logic in how to employ the military. Doctrine affects how the military uses its resources to accomplish goals, i.e., how to fight battles. It is a set of fundamental principles, authoritative in nature, by which the U.S. military guides its actions in support of national objectives. Changes to doctrine are iterative in nature, and require feedback from how the outputs affect the threat environment. This is described by a ‘delay’ notation in the model. The Organizational subsystem deals specifically with the structure and processes of the organization as a whole. It defines how elements within the organization pass information and organize in order to execute the strategy. Organizational change refers to adjustments in the structure and work-flows within the organization.

B. STRATEGY SUBSYSTEM

It is the role of the United States military to use its resources to contribute to the accomplishment of the National Security Strategy (NSS). On a broad scale, this declaration of the grand strategy of the United States presents to the people how the President plans to implement the elements of power to achieve a desired end state. The objective never strays far from what President Bush states in the 2006 NSS: “to protect the lives and livelihoods” of the American people.⁹³ Without a doubt, the contributing factors to the end state certainly vary over time. Since the NSS presents the ideas of how the military is to be used, it is logical that military strategy should be derived from the ideas presented in the NSS.

C. ORGANIZATIONAL SUBSYSTEM

Historically, the military bureaucracy has been effective in creating a force to implement military strategy. Bureaucracies in general provide for “systematic and rational ways to organize and manage tasks too complex to be understood and handled by a few individuals, thus greatly improving the efficiency and effectiveness of large organizations.”⁹⁴ Henry Mintzberg, a renowned organizational theorist, claims that certain organizational types fit to particular environments and contends that a bureaucracy is most effective when the environment of the organization is stable and

⁹³ George W. Bush, *The National Security Strategy of the United States of America 2006* (Washington D.C.: U.S. Government Printing Office, 2006), 12, <http://www.whitehouse.gov/nsc/nss/2006/> (accessed April 14, 2007).

⁹⁴ Daft, 104.

complex.⁹⁵ A stable environment is one where the variables stay the same over many months or years. Clark Murdock, in his study of the Goldwater-Nichols Act states, “Much of the United States’ national security structure was built in an era of predictable, relatively static threats.”⁹⁶ During the Cold War period the relatively stable environment allowed for the military to focus on streamlining internal processes without concern for sudden change in the external environment.

In the years since the end of the Cold War, significant changes have occurred in the environment due to increased political instability and the advent of the Information Age. These changes have the net effect of increasing the complexity and instability of the environmental factors with which the military must contend. According to Mintzberg’s theory, with these types of changes there should be a corresponding change in organizational form if the organization is to be effective in dealing with competitors. In our model, we show that the external environment’s influence on the organizational subsystem is routed via the strategic subsystem.

Civilian corporations are dealing with the same intensity of change and are coming to the “stark realization that the traditional bureaucratic approach is no longer suitable to support competitive positioning in this environment.”⁹⁷ Military leaders and advisors also realize that an “organization facing a rapidly changing marketplace and new technologies must adapt or risk becoming irrelevant.”⁹⁸ Unfortunately, the bureaucratic organizational form creates a catch-22 situation for military leaders.

In this unstable environment, bureaucracies have external and internal obstacles to contend with in order to operate effectively. First, the external environment may mutate

⁹⁵ Henry Mintzberg, “Structure in 5’s: A Synthesis of the Research on Organization Design,” *Management Science* 26, no. 3 (1980): 322, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=7361248&site=ehost-live&scope=site> (accessed November 23, 2006).

⁹⁶ Clark A. Murdock et al., *Beyond Goldwater-Nichols: U.S. Government and Defense Reform for a New Strategic Era, Phase 2 Report* (Washington, DC: Center for Strategic and International Studies, 2005), 13, http://www.csis.org/media/csis/pubs/bgn_ph2_report.pdf (accessed August 20, 2006).

⁹⁷ D. Jamali, G. Khoury and H. Sahyoun, “From Bureaucratic Organizations to Learning Organizations: An Evolutionary Roadmap,” *Emerald Journal: The Learning Organization* 13, no. 4 (2006): 337, <http://www.emeraldinsight.com/10.1108/09696470610667724> (accessed September 10, 2006).

⁹⁸ Michael G. Shanley et al., *Transformation and the Army School System* (Santa Monica, CA: RAND, 2005), 91, http://www.rand.org/pubs/monographs/2005/RAND_MG328.pdf (accessed October 5, 2006).

faster than the internal formalization and standardization of procedures can be adjusted to assure a favorable outcome. Thus the procedures used in yesterday's wars, i.e., doctrine, may hamper efforts to fight the current conflict. According to Barry Posen, the military organization affects the doctrine because "military doctrines are in the day-to day custody of military organizations."⁹⁹ The military organization has the responsibility for the development and execution of the doctrine in peacetime and war, respectively. Therefore, the organization "exerts[s] a powerful and distinctive influence on military doctrine."¹⁰⁰ As Douglass Macgregor exclaims, "revolutionary advances in war fighting will really depend more on organizational change than on technology alone."¹⁰¹ Additionally, the current hierarchical structure creates a hierarchical approach to war "that currently characterizes U.S. military doctrine."¹⁰²

Second, a characteristic inherent to the bureaucracy is distributed power to particular individuals to assure tasks are accomplished. Posen claims this redistribution of limited power makes those empowered unmotivated to change: "Generally, it is not in the interests of most of an organization's members to promote or succumb to radical change."¹⁰³ Jeffrey Pfeffer, the author of *Managing with Power*, explains Posen's claim by saying, "Almost any innovation, of either a product or a process, inevitably changes power structures."¹⁰⁴ As power is a tightly held commodity, a redistribution of power means someone is going to lose power during the change.

From an organizational standpoint, even if the need to change is detected, the structural and individual interests often inhibit the motivation to actually change. The Center for Strategic and International Studies states, "Today we face adaptive, highly-agile opponents with flexible doctrine, short chains of command, and rapid internal

⁹⁹ Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany between the World Wars* (New York: Cornell University Press, 1984), 54.

¹⁰⁰ Ibid., 42.

¹⁰¹ Douglas A. Macgregor, *Transformation Under Fire: Revolutionizing How America Fights* (Wesport, CT: Praeger Publishing, 2003), 148.

¹⁰² Arquilla and Ronfeldt, 86.

¹⁰³ Posen, 54.

¹⁰⁴ Jeffrey Pfeffer, *Managing with Power* (Boston: Harvard Business School Press, 1992), 67.

processes. Coherence and agility are natural enemies, and it is no small trick to make any structure the size of the U.S. government either coherent or agile.”¹⁰⁵

D. DOCTRINE SUBSYSTEM

In our prescriptive framework, strategy, with input from the organization subsystem, shapes military doctrine. In his book on the sources of military doctrine, Barry Posen states:

A military doctrine may harm the security interests of the state if it is not integrated with the political objectives of the state’s grand strategy – if it fails to provide the statesman with the tools suitable for the pursuit of those objectives. A military doctrine may also harm the security interests of the state if it fails to respond to changes in political circumstances, adversary capabilities, or available military technology – if it is insufficiently innovative for the competitive and dynamic environment of international politics. If war comes, such a doctrine may lead to defeat.¹⁰⁶

A brief overview of the changes within the political circumstances, adversary capabilities, and military technology over the past 20 years would lead one to believe that tremendous doctrinal change has occurred within the military. Contrary to this logic, Colonel Douglas A. Macgregor claims that many of the military’s command relationships, connectivity between communications nodes, structures for information exchange requirements, and associated support equipment is inappropriately lodged in an architecture developed in World War II. He argues, “New missions for today’s military establishment that were either unknown or unanticipated fifty years ago make change in the command and control structure of today’s World War II-based operational structure imperative.”¹⁰⁷ He also says that the concept of using new technology within the command structure dictated by doctrine limits the potential revolutionary effects of the technology.¹⁰⁸

Colonel Macgregor gives insight to the working relationship between doctrine, technology, and organization. From this example, it is clear that the relationship between

¹⁰⁵ Clark A. Murdock et al., 13.

¹⁰⁶ Posen, 16.

¹⁰⁷ Douglas A. MacGregor, “Transforming Operational Architecture for the Information Age,” (presentation, Tel Aviv University), 2, <http://www.comw.org/pda/fulltext/00jaffemacgregor.pdf>, (accessed August 8, 2006).

¹⁰⁸ Ibid., 1.

strategy, doctrine, and organization should be as depicted in Figure 3. That is, influence should flow from the strategy component to the doctrine and organization components; doctrine and organization should not be the primary shaping forces on strategy.

The idea of paradigms may be applied metaphorically to the concept of military doctrine. Doctrine is ingrained in soldiers' minds and is to be applied in wartime situations as taught in peacetime. Imagine the opportunities that appear when doctrine is seen as a leverage point for change rather than a standard operating procedure. This method of looking at the current strategy, which is based on the current environment, encourages the military member to enact anticipatory change. He can then adjust the doctrine that won the last war in order to win the current war. To remain locked in the dated, albeit previously successful, doctrine is a recipe for failure.

E. TECHNOLOGY SUBSYSTEM

Technology affects the context of how the military components interface with the external environment due to the interaction of new equipment and operational procedures.¹⁰⁹ Although the military has internal units that perform technological research to support current doctrine, technology is generally developed outside the military's internal environment.

As seen from historical examples, technology and doctrine have an interesting relationship. In the American Civil War, “new technologies were ...married to old concepts of operations.” As a result, the war became one of attrition rather than one of “military genius”. Dr. John Arquilla contends the Confederate Army could have prevailed if it had realized the effect that the technological advances of the industrial age had on the offense-defense balance.¹¹⁰ Similarly, Stephen Cimbala states that technology should shape doctrine and organization.¹¹¹ Thus, in our model the flow of influence is from technology to doctrine.

¹⁰⁹ Beyerchen, 268.

¹¹⁰ John Arquilla, “The Confederacy Could Have Won – Unconventionally: A Thought Experiment for Special Warriors,” *Special Warfare* 14, no. 1 (Winter 2001): 15, <http://libproxy.nps.edu:8080/login?url=http://proquest.umi.com/pqdweb?did=78500014&Fmt=7&clientId=11969&RQT=309&VName=PQD> (accessed January 19, 2007).

¹¹¹ Stephen J. Cimbala, “Transformation in Concept and Policy,” *Joint Force Quarterly*, 3rd Quarter, 38 (2005): 30, http://www.dtic.mil/doctrine/jel/jfq_pubs/0838.pdf (accessed January 19, 2007).

The magnitude of change in the technology subsystem may be small or classified as “shocks”. Akin to the idea of the complex adaptive system, a small change in the technology subsystem may have “dam bursting effects” on doctrine.¹¹² The strategy subsystem is updated via a feedback loop from this interface between doctrine and technology. While critical to understand the functionality of technological advances, “it is equally important that risks and vulnerabilities—the stuff of strategy—remain foremost in assessing their political and military implications.”¹¹³

F. CULTURE SUBSYSTEM

MIT professor Edgar Schein defines culture as:

The deeper level of basic assumptions and beliefs that are learned responses to the group’s problems of survival in its external environment and its problems of internal integration; are shared by members of an organization; that operate unconsciously; and that define in a basic “taken-for-granted” fashion in an organization’s view of itself and its environment¹¹⁴

In our study of the military as an open system, it is interesting that Dr. Schein states that culture allows the organization to cope with its internal and external environment. Other organizational theorists state that culture is a by-product of the organizational structure, the types of tasks performed, the manner in which the tasks are carried out, and the types of people in the organization.¹¹⁵ To clarify, the culture that emerges today was created yesterday, and will affect how an organization views its environment tomorrow. Because culture is a result of numerous factors and has an “unconscious” aspect, it is very difficult to change it directly or quickly.

Williamson Murray describes military culture and its role within the organization as “the sum of the intellectual, professional, and traditional values of an officer corps; it

¹¹² John Arquilla, (class lecture, Military Organizations and Technological Change, Naval Postgraduate School, Monterey, CA, Summer 2006).

¹¹³ Ryan Henry and C. Edward Peartree, “Military Theory and Information Warfare,” *Parameters* 28, no. 3 (Autumn 1998): 135, <http://libproxy.nps.edu:8080/login?url=http://proquest.umi.com/pqdweb?did=33612503&Fmt=7&clientId=11969&RQT=309&VName=PQD> (accessed January 19, 2007).

¹¹⁴ National Defense University, “Strategic Leadership and Decision Making – Organizational Culture,” *Air University*, <http://www.au.af.mil/au/awc/awcgate/ndu/strat-ldr-dm/pt4ch16.html> (accessed November 16, 2006).

¹¹⁵ Erik Jansen, slides from class, based on McCaskey- Roberts/Hill (Class lecture, Organizational Design for Special Operations, Naval Postgraduate School, Monterey, CA, Spring 2006).

plays a central role in how the officer corps assesses the external environment and how it analyzes the possible response that it might make to the threat.”¹¹⁶ In other words, the culture both creates and reinforces the already established mental models within the military organization. In this manner, military culture represents the intellectual capacity or the mental models that allow ground, air, and maritime forces to train for and execute strategy.

In our prescriptive framework, we show culture as a by-product of the internal environment of the military system. Based on Dr. Schein’s work, culture is also shown as a filter between the military’s external and internal environment.

G. A BALANCING ACT

New technologies seem to arrive at a quickening pace, and it is difficult to determine which ones will give our side the decisive edge in battle. Innovations that have revolutionary effects on the nature of warfare often are unanticipated and rapid in nature. These times of “punctuated equilibrium” are like those instances when the planets align; they don’t happen very often, and a number of factors must fall into precise alignment for the event to occur.¹¹⁷ In a punctuated equilibrium of the military system, the forces of strategy, organization, and doctrine are in harmony with its present external environment.

Our current environment is driven by the characteristics of the Information Age. The technological advances are shaping the methods by which people interact, as well as changing the types of people who interact with each other. “At a macro level, the increased interconnections enabled by computers, communication technologies and global business networks have created a more complex economic and social environment.”¹¹⁸ The combination of political instability and technological advances made during the late 1980s and 1990s led to the formation of networked individuals with the power to inflict harm on traditional nation-states. This concept was probably laughable twenty-five years ago.

¹¹⁶ Williamson Murray, *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan R. Millett (New York: Cambridge University Press, 1996), 313.

¹¹⁷ Arquilla, (Military Organizations and Technological Change).

¹¹⁸ Duke Okes, “Complexity Theory Simplifies Choices,” *Quality Progress* 36, no. 7 (2003): 35, <http://libproxy.nps.edu:8080/login?url=http://proquest.umi.com/pqdweb?did=370881671&Fmt=7&clientId=11969&RQT=309&VName=PQD> (accessed June 4, 2006).

Another byproduct of the Information Age is that the strategic, operational, and tactical levels of operation are compressed. Tactical events may have strategic implications, and the ramifications of an ill-chosen tactic loom large. Field Marshal Helmuth Graf von Moltke hints at this influence with, “[t]he demands of strategy grow silent in the face of a tactical victory and adapt themselves to the newly created situation.”¹¹⁹ The strategic silence may create a political uproar.

H. SYSTEMS THINKING AS A TOOL TO DEAL WITH COMPLEXITY

From the analysis of the subsystems covered so far, one aspect remains constant: a change in the environment affects the other subsystems. As illustrated in our prescriptive framework, a change that occurs in one of the subsystems has an effect on the others. We have listed just a few examples of where there are many factors changing, but the concept of the relationships between the military subsystems remains stagnant within the leaders’ minds. The question remains: Why don’t leaders entertain changing these relational concepts just as eagerly as they embrace new technologies? Systems thinking should force leaders to raise their level of analysis and enables them to better understand relationships between the components within the military system.

There are a number of reasons why the military needs different methods to categorize its environment. The most obvious reason is that the military needs to make decisions that mitigate unintended effects. In the Information Age, the lines between the tactical, operational, and strategic levels of war are blurred; the traditional ways of defeating the enemy may have unexpected and profound effects.¹²⁰ In the past 60 years, the United States has been involved in many more unconventional wars than conventional. It is crucial for the U.S. military to be more flexible in applying resources to defeat enemies who act without the constraints of conventional warfare. Today’s military organizations need to view change as a learning process and a necessity instead of a threat to a long-standing and successful “institution.” By unreasonably protecting aspects of its internal environment without analysis of the ordered effects of doing so, the

¹¹⁹ Helmuth Graf von Moltke, quoted in Peter Gray, *Irregular Enemies and the Essence of Strategy: Can the American Way of War Adapt* (Carlisle, PA: Strategic Studies Institute, 2006), 52, <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB650.pdf> (accessed August 20, 2006).

¹²⁰ Edward N. Luttwak, “Notes on Low-Intensity Conflict,” *Parameters* (December 1983): 333-341.

military imposes constraints on itself which makes it ineffective in critical situations.¹²¹ Doctrine is a perfect example of a constraint. War planners tend to treat doctrine shaped by the last war as a paradigm for action until it has failed in the current war. In fact, Barry Posen finds that the need to change within military organizations stems from one of two occurrences: military defeat and civilian intervention.¹²² Since the Goldwater-Nichols Act has in effect lessened civilian influence on the military, one hopes that the military can learn on its own rather than suffer defeat.¹²³

Systems thinking will enable the military to identify those barriers within the organization – the barriers in which the military has actual control over – that inhibit its ability to achieve national objectives.

What is at issue is not whether or not change should occur. Ultimately there is no effective barrier to change. There are, however, numerous barriers to effective change. The distinction is in the final outcome. Organizations in general and military forces in particular either emerge stronger and more capable of performing their mission, or they are defeated and replaced.¹²⁴

¹²¹ Doug Borer, (class lecture, Warfare in the Information Age, Naval Postgraduate School, Monterey, CA, Spring 2006).

¹²² Posen, 57.

¹²³ Christopher M. Bourne, “Unintended Consequences of the Goldwater-Nichols Act,” *Joint Force Quarterly*, (Spring 1998): 100, http://www.dtic.mil/doctrine/jel/jfq_pubs/1818.pdf (accessed September 6, 2006).

¹²⁴ Jay M. Parker, “Into The Wind, Against The Tide: Change and the Operational Commander,” (Master’s Thesis, Naval War College, February 8, 1994), 3, <http://handle.dtic.mil/100.2/ADA279635> (accessed September 6, 2006).

THIS PAGE INTENTIONALLY LEFT BLANK

V. A THEORETICAL FRAMEWORK OF THE MILITARY SYSTEM

A. INTRODUCTION

*Literature . . . often portrays . . . change like a brisk march along a well-marked path, while those in the middle . . . are more likely to describe their journey as a laborious crawl toward an elusive, flickering goal, with many wrong turns and missed opportunities along the way.*¹²⁵

-Todd Jick

Today, military professionals and politicians agree that the threats facing the U.S. Army in Iraq and Afghanistan, while prosecuting the GWOT, are distinctly different than the threats that the U.S. military is prepared to fight.¹²⁶ Similarly, in 1976, the U.S. Army's Special Warfare Center conducted a study that concluded that "nearly every analyst and political and military leader agreed that pacification was the key requirement for building a viable national government and defeating the insurgency" in Vietnam.¹²⁷ In other words, the majority of our national decision makers agreed that the Vietnam strategy had to focus on the population rather than the military forces of North Vietnam, yet this strategy was not adopted. This leaves one to believe that the current military organization's asymmetry with today's threat environment is not all together new.

A generation has passed since the Vietnam War and the U.S. military system continues to be unable to effectively execute a viable strategy. How is it that the U.S. military continues to disregard alternative strategies? Looking at the military system and its subsystems, using the principles of systems thinking, provides an answer to this question. As Colonel Douglas A. Macgregor wrote in his most recent book, *Transformation Under Fire: Revolutionizing How America Fights*, "For [A]rmy transformation to be progressive...a clear connection between strategy, structure, readiness, thinking, technology, and transformation must exist."¹²⁸

¹²⁵ Todd D. Jick, *Managing Change: Cases and Concepts* (Boston: Irwin McGraw-Hill, 1993), 193.

¹²⁶ Macgregor, *Transformation Under Fire: Revolutionizing How America Fights*, 7.

¹²⁷ Thomas Adams, *US Special Forces in Action* (London: Frank Cass, 1998), 143.

¹²⁸ Macgregor, *Transformation Under Fire: Revolutionizing How America Fights*, 147.

The subsystems of strategy, doctrine (thinking), organizational force structure, threat environment, and technology become the most prominent variables when looking at the military organization using systems thinking. A significant discovery is that the flow of information between the subsystems is either restricted or seriously distorted in today's military organization. This distortion causes a less than optimal relationship between the subsystems. We call these distortions *inhibitors* to proper information flow within the military system. The purpose of this chapter is to introduce the theoretical framework, identify inhibitors within the framework, and discuss how these inhibitors affect the relationships between the different subsystems operating within the military system. Again, we do not claim this to be an exhaustive list of all the variables that contribute to the functioning of the military organization. However, we do wish to narrow the analysis to specific variables that possibly have the most impact and from which agents of change may find the most leverage.

The theoretical framework of the military system shows how the military system actually works and reasons for its sub-standard performance. The first section introduces a framework of the military system of systems describing the causal relationships between the threat environment, technology, strategy, doctrine, and organizational force structure. The remaining sections focus on the specific inhibitors and how they relate to the various subsystems. The final section addresses the issue of defining culture as either the problem or the solution to change upon which academics, politicians, and military professionals focus too much attention.

The larger purpose of this chapter is not to suggest answers or solutions, but to offer an intelligent discussion of how military organizations change and what may cause the changes. By using systems thinking basics and simply identifying how the system and its subsystems interrelate, we may begin to understand the leverage points for change and how to move our military beyond the 21st century and current processes.

B. THE FRAMEWORK

Why is the premier fighting force in the world, the U.S. military, losing control and influence in the Iraq and Afghanistan theaters after initial historic success? We argue it is because the U.S. military's system of operation is handicapped by several inhibitors.

In order to identify and understand these inhibitors and where they are located, we must look at the military as a complete and open system, as illustrated in Figure 4.

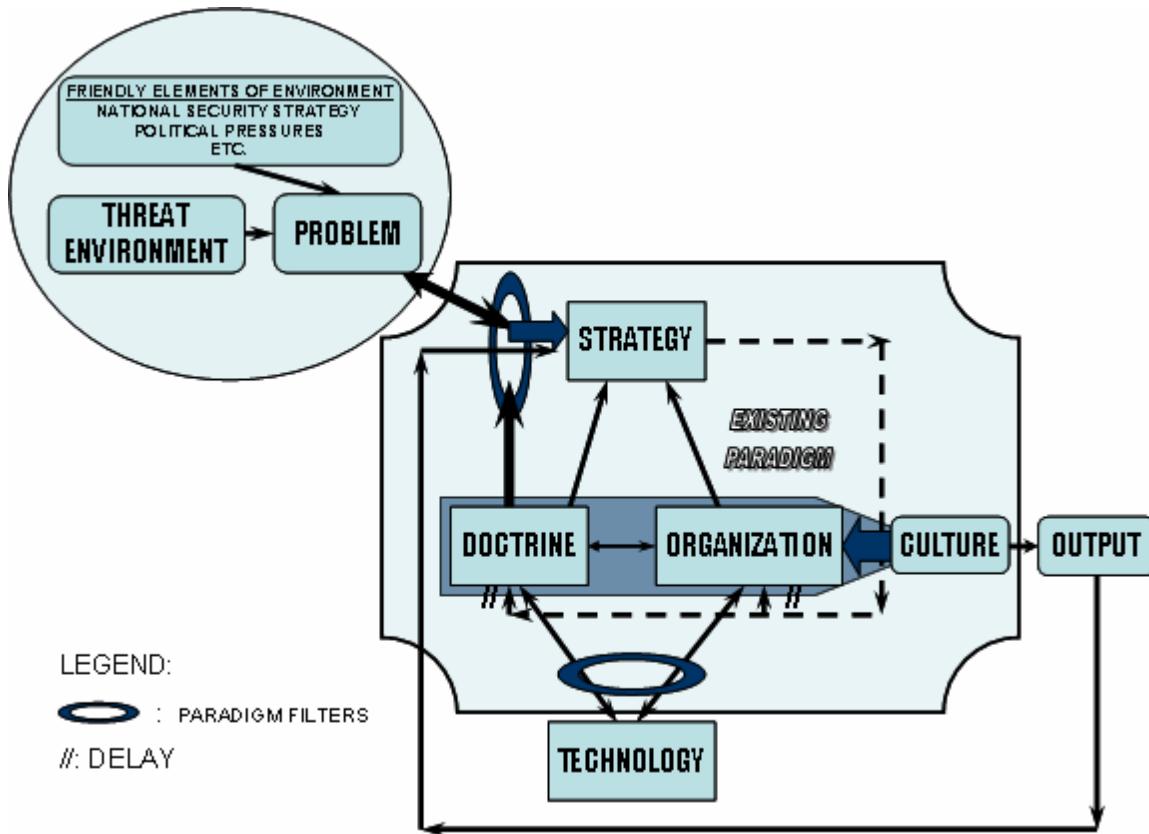


Figure 4. The Theoretical Framework of the Military System

A quick study of this framework brings to light two major differences between the prescriptive and theoretical frames. The first difference is created by the doctrine and organizational force structure that dictate the capabilities and strategy the military organization is likely to favor. This phenomenon, depicted in Figure 4, causes the doctrine and organization to influence the strategy rather than the strategy influencing the doctrine and organization. This effect is caused by the rigidity of military doctrine and the legacy of organizational force structure. The second difference is the presence of a paradigm filter that is a product of doctrine. Military leadership, analysts, and strategic planners analyze and define the threat environment in terms of the doctrine that they are prepared to implement.

The two major inhibitors to the military change process are the organization's rigidity of doctrine and its stalwart commitment to the current organizational structure. These two distortions change doctrine and structure from being dependent on strategic plans focused on the threat environment to becoming fixtures that define the military organization, independent of the threat environment. This rigidity produces an inability for the organization to craft a viable strategy when the threat environment and the system are not most favorably matched. Additionally, this rigidity of the doctrine has, in practice, created a "paradigm filter" that influences not only how the military organization defines the threat, but also, the organization's strategic interaction with the threat environment.

In order to develop an optimal strategy, military doctrine and organizational force structure have got to become dependent on the strategic plan. Anthony H. Cordesman states, "Any 'new way of war' is built solidly on the past and the proper mix of new and old capabilities."¹²⁹ On the contrary, a "new way of war," must focus on the threat environment and be built "solidly" on a viable counter-threat strategy. Rather than the military's primary role being to fight and win our nation's *wars*, the military's role should be focused on fighting and successfully countering *national threats* which include both non-state and state actors. Therefore, the military organization must be prepared to develop and execute a strategy focused on the threat, rather than, go to war with the military, its doctrine and force structure that they have.¹³⁰

C. THREAT ENVIRONMENT

If you were to try and place a frog into a pot of boiling water, as you would expect, it will immediately jump out. However, if the frog is placed in room temperature water that is gradually brought to a boil, then the frog will not jump out of the pot. Like

¹²⁹ Anthony H. Cordesman, *The Iraq War: Strategy, Tactics and Military Lessons* (Washington, DC: Center for Strategic and International Studies, 2006), 160.

¹³⁰ Reference to Secretary of Defense, Donald Rumsfeld's answer to questions in an open forum with service members in Kuwait in December 2004. After a question from Army SPC Thomas Wilson, "Why do we soldiers have to dig through local landfills for pieces of scrap metal and compromised ballistic glass to up-armor our vehicles?" The Defense secretary answered: "You go to war with the Army you have. They're not the Army you might want or wish to have at a later time."

Rahm Emanuel, "Remember Where the Buck Stops," *Los Angeles Times*, May 29, 2006, <http://proquest.umi.com/pqdweb?index=0&did=1043360531&SrchMode=1&sid=14&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1176144464&clientId=11969> (accessed 9 April 2007).

the frog, only after a sudden change in its environment will an organization, “sense” the need to change.¹³¹ However, the organization must realize, before the environment becomes fatal, that the water in which it finds itself is changing. The threat environment, whether defined as a national force, a terrorist network, or an ideology, creates problems for the military organization. In this section, we address the absence, misinterpretations, or existence of external stimuli and their effects on the change process.

The absence of an external stimulus, either political or situational, makes change within a military organization less likely. For example, Geoffrey L. Herrera and Thomas G. Mahnken show that after the Napoleonic Wars, the British Army did not transform as the continental armies did in Prussia, Austria, and Russia because they saw no need to alter their composition and because they “had not suffered a traumatic defeat at the hands of the French.”¹³² Therefore, Britain was Napoleon’s only adversary that did not depart from its long-established method of ground combat after the Napoleonic Wars. This found the British infantry “ill-trained, ill-equipped, and ill-prepared” for deployment on the continent prior to WWII.¹³³

Another point of view, but just as disturbing, is that organizations do not recognize failure, but focus mainly on success. Today, the military does not see a need to change after it achieved success in historical proportions during Desert Storm. The U.S. military is struggling to adjust doctrine, structure, and strategy after the current doctrine, AirLand Battle Doctrine, achieved unprecedented dominance during Desert Storm. The enemies of the United States have learned from Desert Storm that the military continues to view unconventional warfare as a lesser form of conflict rather than a viable strategy worthy of extensive change and implementation. “The [d]efense [e]stablishment as a whole still operates under the implicit assumption that “low-intensity” warfare is merely

¹³¹ Senge, *The Fifth Discipline*, 22-23.

¹³² Geoffrey L. Herrera and Thomas G. Mahnken, *The Diffusion of Military Technology and Idea*, ed. Emily Goldman and Leslie Eliason (Stanford: Stanford University Press, 2003), 217.

¹³³ Murray, *Military Innovation in the Interwar Period*, 11.

a lesser-included case of ‘real’ war.”¹³⁴ The result is an unwillingness to accept that the vast majority of state and non-state actors are not inclined to engage the U.S. military in a conventional conflict.

Correspondingly, the military organization will confidently validate the superiority of its doctrinal and strategic thought if its leadership suitably redefines its failures as “anomalies” or “unique situations.” General Gordon Sullivan, in his analysis of Army Transformation, quotes Arie de Gues of Royal Dutch Shell, who said that it is key for leadership “to recognize and react to environment change before the pain of a crisis.” Sullivan argues that this is very difficult. “Without a perceptible crisis to galvanize people to action, there is enormous resistance to change.”¹³⁵ Therefore, the absence of a crisis creates a perception of success within the military organization. This perception can lead to an unhealthy evaluation of the organization’s capabilities and ability to withstand environmental change, making it extremely difficult, if not impossible, to change a successful organization.

The mere existence of detrimental stimuli does not guarantee appropriate change, either. After 9/11, the external stimulus was painfully apparent. During Operation Enduring Freedom, the external stimulus that created overwhelming success was the political demand for the military to “act quickly.” The political will and public pressure were too great for any reaction less than an immediate response. Because of the nation’s impetus to act quickly, the United States Special Operations Command was the only organization capable of getting boots on the ground, in short order. Therefore, the President, through the Department of Defense, ordered a handful of Special Operations Forces from Fort Campbell, Kentucky to work “by, with, and through” the Afghanistan Northern Alliance. There is no doubt that “the war in Afghanistan demonstrated the power of U.S. unconventional warfare capabilities when merged with standoff conventional capabilities, such as precision air power.”¹³⁶ Once the 10th Mountain Division accepted command responsibility in Afghanistan, a conventional strategy began

¹³⁴ Luttwak, 335.

¹³⁵ Sullivan and Harper, 173.

¹³⁶ U.S. Congress. House, Committee on Armed Services, *Panel on Gaps-Terrorism and Radical Islam, Special Operations Forces Capability, Capacity, and Posture Gaps for The Global War on Terrorism*, 109th Cong., 2nd sess., October 26, 2005, 8.

to permeate the battle space. It has taken the U.S. military four years and an additional limited war in Iraq to begin to think about altering the strategic course in both theaters. Unconventional strategy is beginning to find space in the conventional military's thinking with the creation of the Irregular Warfare Joint Operations Concept. However, the adoption and execution of this type of strategy is far more complex than the collaboration and writing of a joint concept.

It is not enough to identify the threat, as organizations must also understand the nature of the threat in order to defeat it. Current military doctrine focuses on mass and firepower to attrit the enemy's forces. In the GWOT, Macgregor recognizes that there is a different threat environment, but he does not understand the nature of the insurgent threat. The insurgent possesses the information advantage and, therefore, maintains the initiative and decides to attack when most advantageous to his cause.¹³⁷ Therefore, the task of forcing the insurgent to battle is problematic. Macgregor suggests

To distinguish a determined enemy such as al-Qaeda from the civilian populace in complex and urban terrain and bring them to battle, army combat units must be capable of encountering an enemy on the ground and *compelling it to react*.¹³⁸

However, the insurgents are not forced to battle. They control their casualty rate and, therefore, do not commit to battle unless the odds are on their side. The non-state actor or “counter-state” has the luxury of winning by not losing, while the state must win to not lose.¹³⁹ This is the nature of the current threat environment in terms of the GWOT.

After the Cold War, the military executed a successful force shift from threat-based to capability based. This inward focus currently shifts attention from the threat environment which, in turn, prohibits the system from achieving optimal performance. Only when the external stimulus, the threat, is identified, can its weaknesses be discovered and then systematically exploited through a proper strategy. As Colonel Robert Killebrew notes in his recent Armed Forces Journal article, “Why Doctrine Matters and How To Fix It,” the U.S. Army is beginning to discover that “capability

¹³⁷ Gordon McCormick, (class lecture, Seminar in Guerilla Warfare, Naval Postgraduate School, Monterey, CA, February 16, 2006).

¹³⁸ Macgregor, *Transformation Under Fire: Revolutionizing How America Fights*, 10.

¹³⁹ McCormick.

based requirements are hollow.”¹⁴⁰ A capability focused organization becomes less effective because it attempts to focus on several capabilities simultaneously. This broad focus fosters a “Jack of all trades, master of none” approach that is ultimately ineffective.

D. TECHNOLOGY

*Knowing what the army does in war helps scientists and engineers with an eye on technology understand what the army needs to be successful in combat.*¹⁴¹

-Colonel Douglas Macgregor

Technology or *technical systems*, as organizational theorists define it, affects the context of how the military components interact with the environment due to the implementation of new equipment and operational procedures.¹⁴² Technological change greatly affects military strategy because it spurs a new logic in how to employ the military. However, if the technology is unable to deliver successfully its anticipated capabilities, then it can create a sense of uncertainty within the organization. Technology can impede the development of doctrine while facilitating structural change.

Technologies may be unable to deliver the foreseen applications, creating uncertainty within the leadership about the utility of the new technological advancement. The limitation of the new technology can adversely affect the development of doctrines when the technology is less mature. “Technology-led military change may be hampered not so much by military conservatism as by the technology itself.”¹⁴³ Chris Demchak claims that the U.S. military’s high aspiration for revolutionary change in information systems may not be obtainable with today’s technologies. Organizational leaders and operators thus may perceive that technologies have an adverse effect on the current command structure or operational practices of a presumably efficient and effective military. Such a perception may lead the military to disregard the possible quantum leaps

¹⁴⁰ Killebrew, 1.

¹⁴¹ Macgregor, Transformation Under Fire: Revolutionizing How America Fights, 17.

¹⁴² Beyerchen, 268.

¹⁴³ Theo Ferrell and Terry Terriff, eds. *The Sources of Military Change: Culture, Politics, Technology* (Boulder, CO: Lynne Reinner, 2002), 14, <http://www.questia.com/PM.qst?a=o&d=105515632> (accessed September 12, 2006).

in advantages gained over their adversary because of fear of losing what they know and are comfortable with.¹⁴⁴ The issue is simply whether, as technologies mature, does the military organization recognize the necessary organizational and doctrinal changes that are required in order to exploit the technological advantages? The current struggles of Information Operations in the military organization are a prime example.

James Q. Wilson, in his book *Bureaucracy*, addresses the relationship between technology and doctrine. “Organizations will readily accept inventions that facilitate the performance of existing tasks.”¹⁴⁵ That is to say, scientists rely on doctrine to guide the path and goals of technological advancements. Thus, Military doctrine dictates the technology that will be developed. For this reason, not all technologies are accepted. According to Wilson, “some technological advancements are resisted for varying degrees because their use changes operator tasks and managerial controls.”¹⁴⁶ Not only does doctrine affect technology, but once investments are made in technological advancements, it is extremely difficult for doctrine to change. Once abundant time and resources are used to develop and integrate a technological advancement into the military system, the path dependence of the technology, in essence, locks the military organization into a doctrine and strategy that are constrained by the available technologies. Furthermore, as the military organization becomes more dependent on technology, the technology begins to define the tasks. As Wilson points out, in Vietnam, “tasks were defined more by available technology...than by a clear understanding of what kinds of tasks were appropriate to the conditions of war in Vietnam.”¹⁴⁷

Macgregor addresses the importance of structure to the adoption of new technologies; he states that “a willingness to change direction in force [structure] is very important to the success of the army's future combat system [FSC] program. FCS development cannot be pursued in isolation from organizational change.”¹⁴⁸ Once a

¹⁴⁴ Chris Demchak, *Military Organizations, Complex Machines: Modernization in the U.S. Armed Services*, (Ithaca and London: Cornell University Press, 1991).

¹⁴⁵ James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, 1989), 222.

¹⁴⁶ Ibid.

¹⁴⁷ Wilson, 44.

¹⁴⁸ Macgregor, *Transformation Under Fire: Revolutionizing How America Fights*, 16.

technological advance is accepted by the military organization, the structure is then able to adjust. For example, as communication and information technology improve, dispersed units will become more lethal and less vulnerable. This was the case in World War II with the invention and fielding of the two-way radios in maneuver formations and possibly with the potential adoption of BattleSwarm Doctrine as information technologies become even more reliable.¹⁴⁹

E. STRATEGY

According to the prescriptive framework, the organization must identify and understand the threat, then develop a strategy, adjust/create doctrine and organize itself to properly execute the strategy. In other words, once a strategy is devised, military tacticians must formulate doctrine based on the strategy and available technology. However, as seen in Figure 4, this is not the case. On the contrary, the strategy that the military decides to employ is based on the current doctrine, available technology, current force structure, and the inherent political pressures associated with said strategy. In this section, we discuss strategy's dependence on doctrine due to the military organization's understanding of strategy, how political risks have a perverse effect on implementing a strategy, and how the Information Age does not make the decision any easier.

In the U.S. military organization, strategy is dependent on doctrine. This statement becomes more apparent after further examination of two separate definitions of strategy. B.H. Liddell Hart in his book, *Strategy*, discusses the differences between Clausewitz's definition of strategy and German World War II General H. von Moltke's definition. Clausewitz understands strategy as "the art of employment of battles as a means to gain the object of war."¹⁵⁰ This is the definition that the U.S. military is more likely to adopt. However, according to Hart, the main fault with this definition is that it allows the reader to "reach the conclusion that in war every other consideration should be subordinated to the aim of fighting a decisive battle."¹⁵¹ This definition of strategy while elevating the prerequisite of battle may inadvertently downplay the importance of political context. On the other hand, Moltke's definition of strategy; "the practical

¹⁴⁹ John Arquilla and David Ronfeldt, *Swarming & the Future of Conflict* (Santa Monica, CA: RAND, 2000), <http://www.questia.com/PM.qst?a=o&d=104303749> (accessed February 22, 2007).

¹⁵⁰ B. H. Liddell Hart, *Strategy* (New York: First Meridian Printing, 1991), 319.

¹⁵¹ Ibid.

adaptation of the means placed at a general's disposal to the attainment of the object in view,”¹⁵² links the general to the government that he is serving, thereby acknowledging the importance of political influence and advice. The U.S. military organization seems to be partial to Clausewitz's definition of strategy; intently focused on the decisive battle or “center of gravity” at the expense of other strategies that may focus more heavily on political context and its relative importance.

Not surprisingly, conventional doctrine is continuing to dominate strategic thinking during the GWOT. The U.S. military organization continues to develop its strategy based on a doctrine focused on winning the *decisive battle*. This is evident when studying Operation Iraqi Freedom (OIF). According to Lieutenant General Scott Wallace, 5th Corp Commander in Iraq, the war would be over once the *decisive battle* at the international airport was won. “For nearly a year, we had recognized collectively that once we were through the Karbala Gap, the fight would not be over until we seized the international airport in Baghdad.”¹⁵³ However, the fight was not over in Baghdad in 2003 and continues to this day. Once the Saddam statue fell, the true fight for Baghdad had just begun even though the *decisive battle* for the Baghdad International Airport ended with a positive outcome.

In Iraq, the environment had changed but the strategy had not. Military commanders, collectively, had failed to identify the change in the environment and continued to execute a strategy that was ill suited to the environment and stood idly by as the control of the population slipped through their collective fingertips. As the U.S. doctrine suggests, a strategist must focus on securing key terrain, such as bridges and airports during a conventional conflict. This strategic focus based on a conventional conflict caused military leaders to underestimate the importance of controlling the local population centers during the combat phase. Instead, they treated the population centers as an afterthought: a task to be completed once the fighting was complete. As Lieutenant General Wallace stated, “We never had any intention of fighting in those southern cities, because we felt that would put us at a disadvantage; so we intended to bypass them.”¹⁵⁴

¹⁵² Liddell-Hart, 320.

¹⁵³ Cordesman, 158-9.

¹⁵⁴ Ibid.

However, once faced with strong opposition, the 5th Corps was able to suppress the population centers that they “anticipated addressing later, in Phase 4 stability operations.”¹⁵⁵ The strategy was driven by the doctrine rather than the threat. As the environment changed during OIF, military commanders had trouble adapting the strategy accordingly, or they simply did not understand the threat.

Not only is the strategy driven by the doctrine, but it is also implemented in order to justify the doctrine to some degree. During both World War II and Vietnam, the strategy was driven by the need to support the doctrine of strategic bombing. According to Bartiz, during Vietnam, the U.S. Air Force (USAF) strategic bombing doctrine dictated the USAF strategy.

The huge B-52s were wheeled out because they were at the center of the air force's most important function, strategic bombing of the USSR. If the air force had not been allowed to use these machines, it feared that its strategic-bombing role might be down graded after the war.¹⁵⁶

As Murray and Millet have stated, the “measure of air effectiveness thus became the number of tons dropped, sorties flown, and acres of cities damaged or destroyed; air war became an end in itself.”¹⁵⁷ In essence, operations became the measures of effectiveness by which particular strategies were justified regardless of their impact or the nature of the conflict.

Political risk, which establishes a political priority by national decision makers, also has a perverse effect on strategic decision making. If a high level of political risk is present with increased priority, then the national government will allocate more than sufficient resources in order to solve the problem. With additional resources the military leadership is less willing to deviate from a strategy based on overwhelming force; regardless of the threat. Conversely, if there is perceived lower political risk, less political oversight and fewer resources are allocated to the problem. With fewer resources, the military leadership is required to entertain alternate strategies. Few Americans remember the success of U.S. strategy in El Salvador during the 1980s while

¹⁵⁵ Cordesman.

¹⁵⁶ Loren Baritz, *Back Fire: A History of How American Culture Led Us into Vietnam and Made Us Fight the Way We Did* (Baltimore: The Johns Hopkins University Press, 1998), 256.

¹⁵⁷ Murray, *Military Innovation in the Interwar Period*, 324.

national leadership was focused on the Soviet Union and Europe. Today we only have to compare and contrast the effectiveness of current U.S. military strategies in Iraq with the effectiveness of the U.S. military strategy in the Philippines to understand the manifestation of this relationship between political risk, governmental priority, and the willingness to implement alternative strategies based on the number of resources allocated by the national government.¹⁵⁸

With the political and conventional military focus squarely on the GWOT theaters of Iraq and Afghanistan, the U.S. military has the freedom or constraint, depending on the point of view, to execute an unarguably successful counterinsurgency strategy in the southern Philippine archipelago which began in February 2002 and continues today. The strategy, executed by 160 U.S. Army Special Forces (SF) advisors, began on the Island of Basilan, the stronghold of Al Qaeda-linked terrorist organization Abu Sayyaf. Thereafter, its success has spread into other terrorist sanctuaries. The strategy focuses on the SF advisors working “by, with, and through” the indigenous security forces using a holistic approach focused on local security and governmental assistance to the population in order to increase governmental legitimacy. According to Greg Wilson, who quotes a Pilipino battalion commander, “where once the people supported rebels and extremists because they felt neglected...the delivery of their basic needs...changed their attitudes and loyalty.”¹⁵⁹ The questions that the governmental strategist must ask are whether or not the threat environment in the Philippines is similar to that found in the theaters of Iraq and Afghanistan? And if so, would our national leadership have the liberty to implement a similarly holistic strategy when the political risks associated with OIF are so high?

F. DOCTRINE

1. Doctrinal Rigidity

*Innovations in military doctrine will be rare because they increase operational uncertainty.*¹⁶⁰

-Barry R. Posen

¹⁵⁸ Hy Rothstein, “Less is More: The Problematic Future of Irregular Warfare in an Era of Collapsing States,” *Third World Quarterly*, 28, No. 2 (2007): 275-294.

¹⁵⁹ Gregory Wilson, “Anatomy of a Successful COIN Operation: OEF-Philippines and The Indirect Approach,” *Military Review*, (November-December 2006): 8.

¹⁶⁰ Posen, 54-5.

Retired General Gordon Sullivan wrote in his book, *Hope is Not a Method*, that “doctrine is the engine of change.”¹⁶¹ This implies that strategy and organizational structure do not change unless doctrine changes. We explain the prescribed relationship between doctrine, strategy, and structure as one where strategy is the driving force of change rather than doctrine and doctrinal rigidity, in and of itself, is one explanation for why this relationship is altered in reality.

James Q. Wilson explains the evolution of Army doctrine from 1958 to 1988, from the “pentomic” division to AirLand Battle doctrine. After the divisional structure of World War II, the Army decided on smaller battle groups in order to counter the devastating effects of atomic weapons on massed troop formations. This new structure was known as the “pentomic” division. Then, the army restructured to the Reorganization Objectives Army Division (a.k.a. ROAD), back to the three brigade (regiment) structure. In the 1970s, after Vietnam, the Army adopted the Active Defense as its doctrine and, ten years later, changed once again to the AirLand Battle doctrine, which is a divisional structure.¹⁶² Even though the doctrine and structure changed four times in fifty-eight years, Kevin Sheehan argues that very little changed at all with respect to army doctrinal focus. According to Sheehan, “the [U.S.] Army limited its innovations to thinking about better ways to counter a Soviet invasion of Western Europe.”¹⁶³ But during the last fifty-eight years, the U.S. Army has fought in Korea, Vietnam, the Dominican Republic, Grenada, Panama, Iraq, Haiti, Somalia, and Afghanistan. None of these wars produced the same “degree of rethinking and experimentation” that is encouraged by possible conflict in Europe and mainland China.¹⁶⁴

Therefore, the core of U.S. Army doctrine has arguably remained the same since World War II: to fight and win in the open plains of Europe, the open deserts of the Middle East, or the open steppes of China. It is spine-tingling to think that the U.S. Army has remained the same doctrinally while our threat environment has evolved and

¹⁶¹ Sullivan and Harper, 10.

¹⁶² James Q. Wilson, *Bureaucracy*, 219.

¹⁶³ Ibid., 220.

¹⁶⁴ James Q. Wilson, *Bureaucracy*.

adapted over the last three or more generations. “To a certain extent this rigidity reflects an inability and unwillingness to recognize not only that their opponent possessed alternative options and conceptions, but that he might exercise those options.”¹⁶⁵ During Vietnam, “the initial doctrinal emphasis clearly came from having the tasks and structure of the army determined by the need to defend Western Europe and to do so by deploying heavy firepower and advanced technologies that would minimize human losses.”¹⁶⁶

Additionally, institutional biases against feedback that challenges current doctrine or closely held concepts of war enhance this rigidity of doctrine within military institutions. According to Murray and Millet, “there was no need for feedback loops to learn ‘lessons’ from either exercises or combat” when high command has all the answers.¹⁶⁷ As Murray and Millet discover in their analysis of doctrine, “such rigidity leads organizations to shut off alternative paths that might have eased the way for military operations.”¹⁶⁸

Nonetheless, the U.S. military seems to be making efforts to overcome doctrinal rigidity. During OIF, the U.S. military, at the Joint Task Force level, has developed the Counter Insurgency Academy in Baghdad¹⁶⁹ with the goal of diffusing battlefield experience in theater. The jury is still out on the effectiveness of the change, but arguably it is a step in the right direction.

One of the many benefits of doctrine is that it creates organizational paradigms that are instrumental in providing the individuals within the organization with mental models while attempting to solve given problems. Jeff Conklin has explained Thomas Kuhn's paradigm as a “cognitive foundation on which attitudes, beliefs, and concepts come and go. . . Sensory systems are designed to measure change. If a belief or sensation

¹⁶⁵ Murray, *Military Innovation in the Interwar Period*, 323.

¹⁶⁶ James Q. Wilson, *Bureaucracy*, 44.

¹⁶⁷ Murray, *Military Innovation in the Interwar Period*, 324.

¹⁶⁸ Ibid.

¹⁶⁹ Thomas E. Ricks, “U.S. Counterinsurgency Academy Giving Officers A New Mind-Set: Course in Iraq Stresses the Cultural, Challenges the Conventional,” *Washington Post*, A10, February 21, 2006, <http://www.washingtonpost.com/wp-dyn/content/article/2006/02/20/AR2006022001303.html> (accessed February 22, 2007).

is constant, then you can expect it to become invisible over time.”¹⁷⁰ During Vietnam, the military underestimated the number of enemy they were fighting due to their doctrinal biases. According to Loren Baritz, “the military command in Saigon was fixated on conventional, big-unit war, and therefore concentrated on the enemy's units that could engage the Americans in the sort of war the Americans wished to fight.”¹⁷¹ This “fixation” on conventional conflict and enemy military formations caused the “American military [to be] deaf and blind to the insurgency.”¹⁷² They concentrated on the conventional North Vietnamese forces and “wished” the insurgency away.

Additionally, these mental models function as filters through which the U.S. military organization interprets, defines, and predicts changes in the threat environment. They cause the organization to overlook, ignore, or blatantly disregard stimuli; thus, disregarding alternative strategies that are better suited to neutralize a given threat. According to Wilson, “a strong sense of mission may blind the organization to changed environmental circumstances so that new opportunities and challenges are met with routinized rather than adaptive behavior.”¹⁷³ In other words, the leadership interprets the threat environment based on what they want to see rather than what is actually there. This creates bias against feedback that contradicts doctrine or closely held concepts of war. The problem with these biases are that they create instability within the change process and manifests dysfunctional relationships between the components. The U.S. Army continues to fight “a war of its own choosing instead of the war that [is] going on.”¹⁷⁴

2. Misuse of History

*History is at best an imperfect guide to the future, but when imperfectly understood and interpreted it is a menace to sound judgment.*¹⁷⁵

-Bernard Brodie

¹⁷⁰ Jeff Conklin, “The Age of Design,” Paragon Coaching, *CogNexus Institute* (1996): 3-4, <http://www.cognexus.org/ageofdesign.pdf> (accessed January 4, 2007).

¹⁷¹ Baritz, 263-4.

¹⁷² Ibid., 264.

¹⁷³ James Q. Wilson, *Bureaucracy*, 110.

¹⁷⁴ Macgregor, *Transformation Under Fire: Revolutionizing How America Fights*, 196.

¹⁷⁵ Bernard Brodie, *The Ultimate Weapon: Atomic Power and World Order* (New York: Harcourt, Brace, and Company, 1946), 28.

A problem within military organizations that resist change is that they either misuse history or blatantly disregard it. The U.S. military organization has a problem of recognizing its history for what it is and then interpreting it through their doctrinal biases. There are many historians that proclaim that “Generals prepare for the last war and that is why military organizations have a difficult time in the next conflict.”¹⁷⁶ However, Murray and Millet argue that “most armies do nothing of the kind, and because they have not distilled the lessons of the last war, they end up repeating most of the same mistakes.”¹⁷⁷ Rather than prepare for the last war, military organizations “quickly develop myths that allow escape from unpleasant truths.”¹⁷⁸ The organization continually makes the same mistakes that past generations have painfully experienced.

As noted in the previous section, the U.S. Army has had a checkered history in Haiti, Panama, Somalia, Iraq, and Afghanistan while focusing on the AirLand Battle Doctrine. For the most part, the U.S. military leadership has drawn too many favorable conclusions from their indisputable success during Operation Desert Storm. According to John Arquilla and David Ronfeldt, “[while] it is indisputable that the AirLand Battle doctrine was executed well in the Gulf, too much can be read into the outcome of this conflict. [Desert Storm] was not a particularly tough test for U.S. military doctrine.”¹⁷⁹

During Vietnam, General Westmorland wrongly perceived the insurgency as a “war of movement” and inaccurately also classified the American Civil War as such, attempting to draw similarities between the two. This inaccurate use of history along with a misconception of insurgency doctrine caused the U.S. military to depend heavily on “movement to contact” as their primary scheme of maneuver.

The concept behind “movement to contact” as a tactic is that it allows the enemy forces to initiate contact with the U.S. patrols, thereby identifying the enemy’s strength and disposition. The U.S. patrol then requests support. These arriving additional forces allow the initial element, if it continues to exist, to counter punch and attempt to destroy the enemy force in detail; however, this tactic has many flaws when executed in an

¹⁷⁶ Murray, *Military Innovation in the Interwar Period*, 313.

¹⁷⁷ Ibid., 313-4.

¹⁷⁸ Murray, “Does Military Culture Matter,” 140.

¹⁷⁹ Arquilla and Ronfeldt, 76-77.

unconventional conflict. First, the enemy has the initiative; they can decide time and place of the engagement. Second, the enemy has the option to disengage or break contact with the U.S. patrol before reinforcements arrive, thus controlling their casualty rate and maintaining the initiative. According to Andrew Krepinevich, Jr.,

...as long as the government forces are out seeking battle with the guerrilla units, the insurgents are not forced to fight to maintain access to the people. Therefore, the initiative remains with the guerrillas—they can 'set' their own level of casualties (probably just enough to keep the government forces out seeking the elusive big battles), thus rendering ineffective all efforts by the counterinsurgent forces to win a traditional military victory.¹⁸⁰

The tragedy is that the U.S. Army in the last thirty years has not learned from these mistakes. As this thesis is written similar tactics, such as, movement to contact and armed reconnaissance, continue to be employed in Afghanistan with extremely limited results. In the words of Dr. John Arquilla, “military organizations have a selective pillage of history.”¹⁸¹ Fortunately, Richard E. Neustadt and Ernest R. May in their book, *Thinking in Time*, have given decision makers conceptual tools in order to critically evaluate history and its value to making sound decisions.¹⁸²

G. ORGANIZATIONAL SUBSYSTEM

The study of the organizational subsystem and how it affects the military system needs to take into consideration the structure and the processes within this component. Together, the legacy structure of the military and service dominance impair the relationship of the components within the system. Processes within the organizational subsystem, such as recruiting and promotion, have a similar effect.

¹⁸⁰ Andrew F. Krepinevich, Jr., *The Army and Vietnam* (Baltimore: The Johns Hopkins University Press, 1986), 11.

¹⁸¹ Arquilla, (Military Organizations and Technological Change).

¹⁸² Richard E. Neustadt and Ernest R. May, *Thinking In Time: The Uses of History for Decision Makers* (New York: The Free Press, 1986).

1. Organizational Structure

a. Legacy Structure of the Military

*The U.S. Army is designing itself to do what it wants to do, not what the new strategic environment is demanding of it.*¹⁸³

-Colonel Douglas Macgregor

According to Douglas A. Macgregor, there are no proposals since the beginning of Desert Storm designed to “challenge” the Cold War ten-division structure that is “deeply rooted in World War II.”¹⁸⁴ The Objective Force of 2015, according to Macgregor, “boils down to . . . the current army organization and concepts with technologically more advanced equipment.”¹⁸⁵ Even though the U.S. Army leadership acknowledges that the threat environment is changing, it has yet to shift focus toward alternative organizational structures. Macgregor suggests that “throwing masses of men, firepower, and material at even unconventional enemies does not compensate for an army structure and an American way of war that is a poor fit in the world that emerged after World War II.”¹⁸⁶ Yet this structure remains the army’s solution to the problem.

Today in Iraq, as was the case in Vietnam, “the pattern of the way we fought is unmistakable: When something failed to work, we did more of it.”¹⁸⁷ The recent Quadrennial Defense Review has directed the increase of Special Operations Forces¹⁸⁸, the U.S. Army is increasing its divisions by over 25%, adding one brigade to each division,¹⁸⁹ and over 20,000 additional troops are deploying to Iraq this year. These additional resources will be inserted into an existing structure that is suited to follow conventional doctrine and execute conventional strategy.

General George Casey recently commented that he understood how his recently confirmed successor in Iraq, Lieutenant General David Petraeus, “could want the

¹⁸³ Macgregor, *Transformation Under Fire: Revolutionizing How America Fights*, 13.

¹⁸⁴ Ibid.

¹⁸⁵ Ibid., 16.

¹⁸⁶ Ibid., 52.

¹⁸⁷ Baritz, 233.

¹⁸⁸ Rumsfeld, *Quadrennial Defense Review Report*, 42-3.

¹⁸⁹ “Divisions,” *Global Security*, <http://www.globalsecurity.org/military/agency/army/division.htm>, (accessed 8 February 2007).

full complement of 21,500 additional troops that Bush has ordered to Iraq. Casey said they could ‘reinforce success, maintain momentum, or put more forces in a place where the plans are not working.’”¹⁹⁰ If the plans are not working in the first place, it is uncertain that dedicating more resources to the plans will bring success in Iraq. In this case, the structure, doctrine, and strategy should be analyzed to optimize the additional resources.

An unhealthy commitment to combat equipment within the structure also affects the flexibility of doctrine. “A great deal of research is being done to try to allow the main battle tank to survive hits.”¹⁹¹ According to Arquilla and Ronfeldt, the U.S. Army’s commitment to armor “resembles the earlier - and ultimately futile - effort to extend the useful life of the battleship by armoring it ever more heavily.” Arquilla and Ronfeldt suggest that “current defense policy analysis should turn, instead, to considering what alternative force structures are possible.”¹⁹² While the existence of legacy equipment provides little assurance of a failure to adapt, the development and support for alternative structures could stimulate the adaptation of different strategy.

b. Service Dominance

The insular effect on service members, along with an unhealthy competition, creates service parochialism within the military. Academics, military officers, and governmental officials have written extensively about the detrimental effects of service parochialism since the 1950s, yet little has changed within the military organization. Service chiefs and proponents focused on self interest rather than national interest continue to fight for their mandates and assigned tasks by exercising power and influence within the established organizational structure.¹⁹³ Service separatism within the Pentagon has been recorded ad infinitum along with receiving the blame for several tragic incidents in U.S. military history (e.g. the *Pueblo* and *Mayaguez* incidents, Iran hostage rescue, and Vietnam); therefore, we will not discuss the incidents’ many

¹⁹⁰ David Espo, “Casey: Only Half of Troop Boost Needed,” *Yahoo! News*, February 1, 2007, <http://news.yahoo.com>, (accessed February 1, 2007).

¹⁹¹ Ibid., 76.

¹⁹² Ibid.

¹⁹³ U.S. Congress, Senate, Committee on Armed Services, *Defense Organization: The Need For Change*, 99th Cong., 1st sess., 1985, S. Prt. 99-86.

intricacies in this section.¹⁹⁴ However, because service parochialism is a powerful force, we will briefly discuss how it acts as an inhibitor and how parochialism affects strategy, as well as the limited advantages of parochialism.

The military organization can not change doctrine as it relates to a counter-threat strategy without addressing service dominance within the military organization. “Jointness will have to broaden and deepen and be seriously regarded by all as a necessary condition for the rise of a doctrine that would seek to integrate both the data gathering and the fire capabilities of all the services.”¹⁹⁵

This service dominance had a huge impact on the strategy executed during Vietnam. During the Vietnam conflict every service needed a piece of the battle space in order to compete in the after war budget and shaping of the military. “To ensure that each service received the credit it deserved, Vietnam was carved into separate preserves, called route packages, each owned by a different service.”¹⁹⁶ Dr. Kissinger, describing this “crazy quilt of geography and command,” said that it showed “that the [Pentagon’s] organizational requirements overrode strategy.”¹⁹⁷ No service wanted out, even it was inefficient and ineffective to execute a strategy of total inclusion of all services. “The Air Force planned for short wars, while the army planned for long ones.” “Interservice rivalries, competitive scratching for a bigger slice of the budget, run long and deep in the United States.” A similarly service “inclusiveness” hampered the military strategy in Grenada in 1983¹⁹⁸ and not much has changed in Afghanistan or Iraq. Navy Seal Platoons are found in both theaters, but water is not. Naval aircraft are flying sorties in both theaters with mixed results. For example, during a six month deployment to the Gulf, aircraft from the USS Carl Vinson flew 9,520 sorties and dropped a total of four

¹⁹⁴ James Locher, *Victory on the Potomac* (College Station: Texas A&M University Press, 2002), <http://72.14.203.104/search?q=cache:gfj-XYaGSCUJ:www.tamu.edu/upress/BOOKS/2002/sample/locher%2520chap.pdf+Locher+%2B+The+Fog+%2B+of+Defense+%2Borganizations&hl=en&ct=clnk&cd=1&gl=us>, (accessed February 8, 2007).

¹⁹⁵ Arquilla and Ronfeldt, 85.

¹⁹⁶ Baritz, 257.

¹⁹⁷ Ibid., 258.

¹⁹⁸ Susan L. Marquis, *Unconventional Warfare: Rebuilding U.S. Special Operations Forces* (Washington D.C., Brookings Institute Press, 1997), 93-106.

bombs in support of Allied Forces in Iraq in 2005.¹⁹⁹ Lessons learned and combat experience are justifications for the services to engage in what looks like Dr. Arquilla's "BattleSwarm"²⁰⁰ doctrine, not in execution of strategy, but in the service struggle for limited resources within the Pentagon.

Service dominance within the organizational structure also has an effect on technological advancement. Service dominance potentially squanders opportunity to excel as a military organization. Admiral William Owens, in his contribution to "The Sources of Military Change: Culture, Politics, and Technology." makes this point painfully apparent. He describes military organizations as currently not "able to harness the full potential of the application of information technology, because [of] its historically service-centric nature."²⁰¹

The potential advantages that might be realized by working together to create a 'system of systems' for changing joint warfare . . . are lost due to the fragmented, almost piecemeal nature of which information technology is being developed and applied.²⁰²

In contrast, David Tucker has written on the benefits of parochialism within the interagency which may be applicable in military organization. He reminds us that each organization has a mandate to defend and accomplish particular tasks. His view is if we condemn this competition or turf war, then "we are saying in effect that one or more of these mandates or interests represented by the agency is not worth defending."²⁰³ According to Tucker, parochialism is a necessary evil, if we are willing to maintain different abilities and attitudes. This is true; in a military organization different abilities are necessary and essential. But the organizations should either share the same attitudes and ultimate purpose or realize their "niche" and not infringe on the "niche" of others.

Overall, the net effect of the military organization's "service centric" structure deters the organization from efficiently realizing its matured capability. Joint

¹⁹⁹ "USS Carl Vinson Returns from Deployment," *USS Carl Vinson (CVN 70)*, July 31, 2005, <http://www.cvn70.navy.mil/> (accessed April 9, 2007).

²⁰⁰ Arquilla and Ronfeldt, 83.

²⁰¹ Ferrell and Terriff, 269.

²⁰² Ibid.

²⁰³ David Tucker, *Skirmishes at the Edge of Empire* (Westport, CT: Praeger Publishers, 1997), 124.

organizations must be stressed and rewarded within the military organization in order to overcome the service dominance that has existed since the entrée of the military. If this is not possible, then joint is not the answer and an alternative solution is to make each service more mission specific, redefining their niche.

2. Organizational Process

Failure to cooperate in combating terrorism and other matters occurs for many reasons besides what we suppose are the perverse preferences of civil servants. First, the very processes of government make cooperation difficult.²⁰⁴

-David Tucker

a. Recruiting Process

The simple process of recruiting personnel, and the fact that all entries are at the lowest level of the organization, creates an educational bias toward upward progression within the organization. The military institution is a bureaucratic organization of several hieratical levels; therefore, in order to progress to the next level, individuals must come from the previous level of the organization. This promotion process self-perpetuates the reinforced ideals of the organization. While not always a “bad thing,” this phenomenon can create strong opposition to change within the institution.

Because of the entry at the lowest level, there are no means of lateral entry into the organization. In civilian companies lateral entry provides a fresh mind and alternate perspectives when trying to solve the organization's problems. Lateral entry along with a promotion system based on skill rather than time in service could provide increased expertise and intellectual capital to the military organization.

b. Promotion Process

Throughout history, military organizations have been and remain extremely reluctant to reward innovators; however, when innovators were rewarded and positively identified, change was possible. During the early 1900s, the Russians gave their innovators two bullets to the back of the head. French militaries retired their

²⁰⁴ Tucker, 109.

innovators prematurely. On the other hand, in the 1920s German military embraced, tolerated, and promoted “mavericks”, such as, Gudarian, Hans von Seeckt, and Erwin Rommel which created “a climate ideally suited to innovation.”²⁰⁵

Within the U.S. military today, current leadership is overemphasizing the importance of performing in the theaters of Iraq or Afghanistan at the expense of leaders using entirely different strategies in other theaters, regardless of the results. “There is little to no diversity of thinking or attitude in the general officer ranks - selection boards are, in essence, a cloning process.”²⁰⁶

The effect of new missions on career advancement is very interesting. According to Ferrell and Terriff, “no serving officer will be enthusiastic about undertaking something new that contravenes both their self- or corporate identity and their understanding of their promotional prospects.”²⁰⁷ Career preservation within the military organization creates a limited desire to effect change when faced with strong opposition because it could be extremely detrimental to career advancement.

Avant and Lebovic, in their analysis of the U.S. military, have observed a linkage between new missions introduced to the officer corps and the officers' respective prospects for promotion. As suspected, the two variables were inversely related.²⁰⁸ To the degree in which new missions deviate from accepted roles within the organization, the officers are more likely to reject them; because, “such new missions [would] alter their roles, and hence their particular identity” which would “adversely affect their prospects for advancement.”²⁰⁹

Army Colonel John Nagl discusses in book, *Learning to Eat Soup with a Knife*, that the U.S. military failed to acknowledge the benefits of new ways of warfare during the Vietnam War because of the negative effect that this new warfare had on career potential within the organization. As Nagl states, “the whole field of guerilla

²⁰⁵ Murray and Millett, 310.

²⁰⁶ Macgregor, *Transformation Under Fire: Revolutionizing How America Fights*, 195.

²⁰⁷ Ferrell and Terriff, 270.

²⁰⁸ Deborah Avant and James Lebovic, “U.S. Military Attitudes Towards Post Cold War Missions,” *Armed Forces and Society* 27, no. 1 (2000): 37-56, <http://www.csa.com> (accessed September 2, 2006).

²⁰⁹ Ferrell and Terriff, 269.

operations was the burial place for the future of any officer who was sincerely interested in the development and application of guerrilla warfare.”²¹⁰ No wonder alternative strategies and concepts, such as unconventional warfare and counter-insurgency operations remain supporting missions rather than supported missions, even though they are central components to winning the GWOT.

H. COMMON MISCONCEPTION OF CULTURE

Breaking culture . . . takes time and [sic] leadership and patience to bring people along, not only intellectually, but emotionally, to buy into the culture shifts....”²¹¹

-General Schoomaker

Culture is given too much credit and too much blame. Culture is the “predispositions of members, the technology of the organization and the situational imperatives with which the agency must cope.”²¹² Therefore, analysts should place their attention on the particular tasks of the organization and how the organization performs the task or changes the task to create a “sense of mission.”²¹³ Wilson says culture is formed by operators and that “figuring out how best to define tasks and motivate workers to perform those tasks is often described as creating the right organizational culture.”²¹⁴ It is a byproduct of the organization and the tasks that it performs and how it performs them. “Culture is to an organization what personality is to an individual.”²¹⁵

Military culture influences the intellectual capacity or mental models that allow ground, air, and maritime forces to train for and execute strategy. However, what if there are multiple cultures within one organization? According to Wilson, “when the organization stated goals are vague . . . these factors produce different definitions of core tasks for different people (or, more typically, different sub-units), [and] the organization will have several cultures.”²¹⁶ A common mistake in identifying culture as either the

²¹⁰ Nagl, 139.

²¹¹ Schoomaker, 92.

²¹² Wilson, *Bureaucracy*, 92.

²¹³ Ibid., 26.

²¹⁴ Ibid., 31.

²¹⁵ Ibid., 91.

²¹⁶ Ibid., 92.

problem or solution within an organization is to assume that an organization will have a single culture.²¹⁷ In the case of the military organization, there are multiple conflicting cultures, not just a single, homogenous one. When this is the case, it becomes even harder to manipulate, identify, or gauge the culture. Furthermore, sub-cultures play an enormous role in how the individuals within the organization see themselves. Once the culture becomes the identity of the organization, the members of the organization will fight to death in order to defend it.

As General Schoomaker indicated, in his review to the House Armed Services Committee, change is difficult in a strong culture especially if the new ideas are inconsistent with the culture of the organization. However, there is a common misconception that leadership can *shift* culture directly. Culture is itself a surfacing outcome of the organization's leadership, people, and tasks rather than a tangible component that is controllable.²¹⁸

In Nagl's examination of the British and U.S. Military, he attributes the disparity in change to the cultural differences in how the British and the Americans viewed doctrine. The British saw that "Doctrine is not in itself a prescription for success as a set of rules."²¹⁹

General Schoomaker emphasizes what he believes to be the most important takeaway from Nagl's work:

... the real study in that book is not about counterinsurgency, but it is about the difference in the British culture and our culture at those times and place and the difference in our learning organizations, our Armies as learning organizations, and the effect that culture had on them. ... [W]hat we are trying to do is to educate, to roll lessons learned in, to train and to broaden and to become truly a learning culture in our Army so that we are adaptable and flexible...²²⁰

The hazard of this thinking is that the military leadership can not focus on the organization's culture and believe that they can change or shift the culture in order to

²¹⁷ Wilson, *Bureaucracy*, 92.

²¹⁸ Roberts, October 14, 2006.

²¹⁹ Nagl, 7.

²²⁰ Schoomaker, 92.

improve the organization's system. Culture is not a leverage point that is easily manipulated in an organization. On the contrary, an “organization is a complex structure, not just a culture that can be manipulated and shifted in order to achieve desired results.”²²¹ Culture is a way to recognize that there is a problem in the organization. It is more of a measure of effectiveness in gauging an organization's capability to function, rather than a design factor that is easily manipulated or changed. Therefore, culture is not a problem or a solution, but rather a measuring stick that can become a tremendous source of inertia, if it emerges out of a dysfunctional mix of component processes.

I. CONCLUSION

This chapter makes one central assertion, that the current military's doctrine and structure determine strategy with little regard to the threat environment. This chapter attributes this dysfunction to four major impediments of the military organization: recognizing and understanding the threat environment; implementing a strategy that is constrained by current technology; crafting a strategy that is dependent on a rigid doctrine; and developing a strategy that is confined by a legacy structure and its organizational processes and paradigms.

This list is by no means all inclusive, and the identification of a barrier does not suggest a unilateral negative meaning for the concept. The larger purpose of the chapter is to provide the innovator with a modest intelligence preparation of the battlefield of military change. Several concepts within this chapter can be found to stimulate change in one subsystem, while retarding change in another.

A bureaucracy, because of its foundation in equality and fairness, rules, regulations, and procedures, will have a difficult time overcoming these inhibitors of change. The military must realize that its subsystems are in conflict with each other. The rub lies between focusing on the threat and focusing on the organizational capabilities (i.e., doctrine, technology, and structure) in order to formulate an effective strategy. When these systems are in conflict, bureaucratic principles will not lessen the struggle. As General George S. Patton said, “it is not rules that lead to success in war but the indomitable spirit of the leader and his ability to motivate and inspire superhuman

²²¹ Roberts.

performance.”²²² The military organization must identify, develop, and harness those leaders who have the aptitude and perseverance to adjust the system, remove the inhibitors, and restore the flow of information in the prescribed directions.

Before the military begins to change, members must ask themselves two questions. One, what is our threat and therefore, our strategic rationale? Two, how is this change in rationale, strategy, or perspective going to affect the entire system? The current problem is that these questions require innovative and imaginative answers that must come from institutionalized minds within military organizations at the highest levels. Which begs the question, “Can institutionalized minds provide innovative answers?” That is a question worth exploring.

²²² Sullivan and Harper, 182.

VI. CONCLUSION

A. REALIZING THE NEED FOR CHANGE

Despite success in Desert Storm, during the mid 1990's, the U.S. military leadership seemed to be aware of the new and unique threats beginning to emerge around the world. It seemed that the national security environment was becoming increasingly vulnerable and potentially unstable. Yet the need for change was felt very differently among the services. The Navy, having established itself as the world's greatest Sea Power since WWI, unfortunately did not feel the threat until 2001 when the *USS Cole* was attacked by a small explosive laden boat while refueling in Aden Harbor, Yemen. The perceived success of the air war in Operation Allied Force in Kosovo served to reinforce the U.S. Air Force's relatively conventional methodologies for targeting enemy forces. Today, the Air Force's main thrust of effort in change is via a program called Air Force Smart Operations 21. This program focuses on changing internal processes to maximize value and decrease waste. Although useful, it remains to be seen if this internally focused program can help airmen cope with dynamic warfighting environments. In contrast, the Army and its leadership felt relatively early that their organization and soldiers would be at the forefront of any and every battle against this seemingly new enemy. Perhaps this inclination led the Army to realize that there must be a way to handle this dynamic and complex environment and become more flexible in dealing with these changes.

From General Sullivan and Colonel Harper in 1996 to General Schoomaker today, Army leadership, and more recently the Air Force, have adopted the learning organization as the way ahead to become more adaptable to meet the growing demands of the ever-changing threat environment. Unfortunately, the concept has never been truly understood or even conveyed service-wide. Because of this, its successful implementation has been very limited. Systems thinking has yet to be institutionalized among the services, but it is the cornerstone of a learning organization and what makes the other four disciplines work in synergy.

However, we argue in this thesis that we must step away from the idea of the learning organization. It is our contention that the true meaning of this concept has been so diluted by misunderstanding and misuse that its intended effects may never be achieved. Yet if we take one piece of this puzzle, the foundation of the concept, Systems Thinking, we appreciate that *it* can apply to *every* military organization and be very useful in not only realizing the need for change but understanding how these changes affect the entire system. More importantly, through this approach, the reasons why military organizations are resistant to change can finally be realized and understood.

B. WHY ARE MILITARY ORGANIZATIONS RESISTANT TO CHANGE?

It was the purpose of this thesis, to answer the question, “Why are military organizations resistant to change?” Our hypothesis was that there are obvious barriers to change and specific learning disabilities within the military that create an inability and/or an unwillingness to adapt. What these disabilities were, we could only assume. What we found was that this resistance comes from the absence of a sufficient framework to understand the relationships between the strategic, technological, doctrinal and organizational force structure components and the environment in which the military operates.

By viewing the military as an open system, we offered two frameworks. The first, the prescriptive framework, illustrated how each of these subsystems should interact and how, according to the literature, change should be affected. The second, the theoretical framework, showed how different this prescriptive framework actually is from reality. This theoretical framework illustrated these differences and where the resistance within the military system actually occurs. What we find is that there are many barriers to effecting change to include doctrinal rigidity and a legacy force structure that is preserved by a dominant culture, the strength of mental models, the inability to identify or properly define the threat environment based on the misuse of history and the inability to learn from past failures.

C. RECOMMENDATIONS

In analyzing the military from a systems perspective it was never the goal to find *the* solution. Consequently, our sole recommendation is that these frameworks be considered as one way, a different way, of categorizing the internal and external

environments. In doing so, military leadership will be able to realize not only the need for change but how that change, whether within the doctrine, organization or strategy, will affect the *entire system*. It is understood that due to constraints such as technology and political pressure, the prescriptive framework provided is an ideal. A systemic approach should serve military leaders well as they become more aware of what is causing the resistance to changes being implemented. Simply put, the systems approach to viewing change in the military can help identify sluggishness in the system and leverage points to help correct these deficiencies. Those that practice this way of thinking say that it truly becomes a way of life.²²³ In a world, where not everything can be explained in a linear or black and white fashion, this way of life may be the way of future thinking.

²²³ See Senge, *The Fifth Discipline*; Anderson and Johnson, 17.

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF REFERENCES

- Abb, Madelfia A. "Bringing about a Military Learning Organization: The U.S. Army in the Philippine War, 1899-1902." Master's Thesis, U.S. Army Command and General Staff College, February 18, 2000.
<http://handle.dtic.mil/100.2/ADA383682> (accessed July 19, 2006).
- Adams, Thomas. *US Special Forces in Action*. London: Frank Cass, 1998.
- Anderson, Virginia and Lauren Johnson. *Systems Thinking Basics: From Concepts to Causal Loops*. Waltham, Massachusetts: Pegasus Communications, Inc., 1997.
- Ang, Soon and Damien Joseph. "Organizational Learning and Learning Organizations: Trigger Events, Processes, and Structures." Paper, Academy of Management Meetings. Cincinnati, Ohio, August 1996.
<http://www.ntu.edu.sg/home/adjoseph/Webpages/Publications/aom10> (accessed February 2, 2007).
- Argyris, Chris and Donald A. Schön. *Organizational Learning: A Theory of Action Perspective*. Reading, Massachusetts: Addison-Wesley Publishing Company, 1978.
- Aronson, Daniel. "Introduction to Systems Thinking." *The Thinking Page*, 1996.
http://www.thinking.net/Systems_Thinking/Intro_to_ST/intro_to_st.html (accessed February 5, 2007).
- Arquilla, John. "The Confederacy Could Have Won – Unconventionally: A Thought Experiment for Special Warriors." *Special Warfare*. 14, no. 1 (Winter 2001): 10-17.
<http://libproxy.nps.edu:8080/login?url=http://proquest.umi.com/pqdweb?did=78500014&Fmt=7&clientId=11969&RQT=309&VName=PQD> (accessed January 19, 2007).
- Arquilla, John. Class lecture, Military Organizations and Technological Change, Naval Postgraduate School, Monterey, CA, Summer 2006.
- Arquilla, John and David Ronfeldt. *Swarming & the Future of Conflict*. Santa Monica, CA: RAND, 2000. <http://www.questia.com/PM.qst?a=o&d=104303749> (accessed February 22, 2007).
- Avant, Deborah and James Lebovic. "U.S. Military Attitudes Towards Post Cold War Missions." *Armed Forces and Society* 27, no. 1 (2000): 37-56. www.csa.com (accessed September 2, 2006).

- Baritz, Loren. *Back Fire: A History of how American Culture Led Us into Vietnam and Made Us Fight the Way We Did*. Baltimore: The Johns Hopkins University Press, 1998.
- Borer, Doug. Class lecture, Warfare in the Information Age, Naval Postgraduate School, Monterey, CA, Spring 2006.
- Bourne, Christopher M. "Unintended Consequences of the Goldwater-Nichols Act." *Joint Force Quarterly* (Spring 1998).
http://www.dtic.mil/doctrine/jel/jfq_pubs/1818.pdf (accessed September 6, 2006).
- Brodie, Bernard. *The Ultimate Weapon: Atomic Power and World Order*. New York: Harcourt, Brace, and Company, 1946.
- Bucha, Peter. "The U.S. Army War College: A Model Learning Organization for the Army?" Master's Thesis, U.S. Army War College, April 9, 1996.
<http://handle.dtic.mil/100.2/ADA309579> (accessed July 19, 2006).
- Bush, George W. *The National Security Strategy of the United States of America 2006*. Washington D.C.: U.S. Government Printing Office, 2006.
<http://www.whitehouse.gov/nsc/nss/2006/> (accessed April 14, 2007).
- _____. *National Strategy for Combating Terrorism*. Washington, DC: U.S. Government Printing Office, 2006.
<http://www.whitehouse.gov/nsc/nsct/2006/sectionIII.html> (accessed February 22, 2007).
- Cimbala, Stephen J. "Transformation in Concept and Policy." *Joint Forces Quarterly* 3rd Quarter, 38 (2005): 28-33. http://www.dtic.mil/doctrine/jel/jfq_pubs/0838.pdf (accessed January 19, 2007).
- "Company News; Eastman Kodak Profits Fell 93% in 2nd Quarter." *New York Times*, July 18, 2001.
<http://query.nytimes.com/gst/fullpage.html?res=9A04EFD71F3BF93BA25754C0A9679C8B63> (accessed January 17, 2007).
- Conklin, Jeff. "The Age of Design." *Paragon Coaching*. CogNexus Institute. (1996): 3.
<http://www.cognexus.org/ageofdesign.pdf> (accessed January 4, 2007).
- Cordesman, Anthony H. *The Iraq War: Strategy, Tactics and Military Lessons*. Washington, D.C.: Center for Strategic and International Studies, 2006.
- Daft, Richard L. *Essentials of Organization Theory & Design*. Mason, Ohio: South-Western College Publishing, 2003.
- Downie, Richard D. *Learning from Conflict: The U.S. Military in Vietnam, El Salvador, and the Drug War*. Westport, CT: Praeger, 1998.

Easterby-Smith, Mark, John Burgoyne and Luis Araujo, eds. *Organizational Learning and the Learning Organization: Developments in Theory and Practice*. London: Sage, 1999.

Emanuel, Rahm. "Remember Where the Buck Stops." *Los Angeles Times*, May 29, 2006. <http://proquest.umi.com/pqdweb?index=0&did=1043360531&SrchMode=1&sid=14&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1176144464&clientId=11969> (accessed April 9, 2007).

Espo, David. "Casey: Only Half of Troop Boost Needed." *Yahoo! News*. February 1, 2007. <http://news.yahoo.com> (accessed February 1, 2007).

Fastabend, David A. and Robert Simpson. "Adapt Or Die: The Imperative for a Culture of Innovation in the United States Army." *Army* 54, no. 2 (February 2004): 14-22.

Ferrell, Theo and Terriff, Terry eds. *The Sources of Military Change: Culture, Politics, and Technology*. Boulder, CO: Lynne Reinner, 2002.
<http://www.questia.com/PM.qst?a=o&d=105515632> (accessed September 12, 2006).

Garamone, Jim. "Myers: Changing Military Culture Key to Transformation." *DefenseLink*, October 6, 2004.
http://www.defenselink.mil/news/Oct2004/n10062004_2004100603.html; (accessed September 6, 2006).

Garratt, Bob. "The Learning Organization 15 Years on: Some Personal Reflections." *Emerald Journal: The Learning Organization* 6, no. 5 (1999): 202-206.
<http://www.emeraldinsight.com/Insight/ViewContentServlet?Filename=Published/EmeraldFullTextArticle/Articles/1190060501.html> (accessed February 20, 2007).

Gerras, Stephen J. "The Army as a Learning Organization." Master's Thesis, U.S. Army War College, March 3, 2002. <http://handle.dtic.mil/100.2/ADA404754> (accessed July 19, 2006).

Global Security, "Divisions."
<http://www.globalsecurity.org/military/agency/army/division.htm> (accessed February 8, 2007).

Gray, Peter. *Irregular Enemies and the Essence of Strategy: Can the American Way of War Adapt?* Carlisle, PA: Strategic Studies Institute, 2006.
<http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB650.pdf> (accessed August 20, 2006).

Hamm, Steve and William C. Symonds. "Mistakes Made On the Road to Innovation." *BusinessWeek*, November 27, 2006.
http://www.businessweek.com/magazine/content/06_48/b4011421.htm (accessed January 17, 2007).

Hargrave, Timothy J. and Andrew H. Van de Ven. "A Collective Action Model of Institutional Innovation." *Academy of Management Review* 31, no. 4 (2006): 864-88.
<http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=22527458&site=ehost-live&scope=site> (accessed January 10, 2007).

Hart, B. H. Liddell. *Strategy*. New York: First Meridian Printing, 1991.

Henry, Ryan and C. Edward Peartree. "Military Theory and Information Warfare." *Parameter* 28, no. 3 (Autumn 1998): 121-135.
<http://libproxy.nps.edu:8080/login?url=http://proquest.umi.com/pqdweb?did=33612503&Fmt=7&clientId=11969&RQT=309&VName=PQD> (accessed January 19, 2007).

Herrera, Geoffrey L. and Thomas G. Mahnken. *The Diffusion of Military Technology and Idea*. Edited by Emily Goldman and Leslie Eliason. Stanford: Stanford University Press, 2003.

Hoffer, Eric. *In Our Time*. New York: Harper and Row, 1976.

Imershein, Allen W. "Organizational Change as a Paradigm Shift." *The Sociological Quarterly* 18, no. 1 (1977): 33-43. <http://www.blackwell-synergy.com/doi/abs/10.1111/j.1533-8525.1977.tb02160.x> (accessed January 10, 2007).

Jaques, Elliott. "The Development of Intellectual Capability: A Discussion of Stratified Systems Theory." *Journal of Applied Behavioral Science* 22, no. 4 (1986): 361-383.
<http://ft.csa.com/ids70/resolver.php?sessid=26o2351il0j5dri4o6nb3dcs34&server=www-d1.csa.com&check=5afc4435e9873611333b952e55fa1e40&db=sageman-set-c&an=10.1177%2F002188638602200402&mode=pdf&f1=0021-8863%2C22%2C4%2C361%2C1986> (accessed December 6, 2006).

Jamali, D., G. Khoury, and H. Sahyoun. "From Bureaucratic Organizations to Learning Organizations: An Evolutionary Roadmap." *Emerald Journal: The Learning Organization* 13, no. 4 (2006): 337-352.
<http://www.emeraldinsight.com/10.1108/09696470610667724> (accessed September 10, 2006).

Jansen, Erik. Class lecture, Organizational Design for Special Operations, Naval Postgraduate School, Monterey, CA, March 2006.

Jick, Todd D. *Managing Change: Cases and Concepts*. Boston: Irwin McGraw-Hill, 1993.

Killebrew, Robert. "Why Doctrine Matters and How to Fix It." *Armed Forces Journal* (October 2006). <http://www.afji.com/2006/10/1891482/> (accessed November 1, 2006).

- Krepinevich Jr., Andrew F. *The Army and Vietnam*. Baltimore: Johns Hopkins University Press, 1986.
- Kuhn, Thomas. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press, 1996.
- Lawler III, Edward E. *Built to Change*. San Francisco: Jossey-Bass, 2006.
- Locher, James. *Victory on the Potomac*. College Station: Texas A&M University Press, 2002. <http://72.14.203.104/search?q=cache:gjf-XYaGSCUJ:www.tamu.edu/upress/BOOKS/2002/sample/locher%2520chap.pdf+Locher%2B+The+Fog%2B+of+Defense+%2Borganizations&hl=en&ct=clnk&cd=1&gl=us> (accessed February 8, 2007).
- Luttwak, Edward N. "Notes on Low-Intensity Conflict." *Parameters December* 1983:33-341.
- McCann, Joseph E. and John Selsky. "Hyperturbulence and the Emergence of Type 5 Environments." *Academy of Management Review* 9, no. 3 (1984): 460-470. <http://www.jstor.org/view/03637425/ap010035/01a00070/0> (accessed September 1, 2006).
- MacGregor, Douglas A. *Transformation Under Fire: Revolutionizing How America Fights*. Westport, CT: Praeger Publishing, 2003.
- . "Transforming Operational Architecture for the Information Age." Presentation to the Israeli Defense Force, Tel Aviv University. <http://www.comw.org/pda/fulltext/00jaffemacgregor.pdf> (accessed August 8, 2006).
- Maclear, Michael. *The Ten Thousand Day War*. New York: Avon Books, 1981.
- Marquis, Susan. *Unconventional Warfare: Rebuilding U.S. Special Operations Forces*. Washington D.C., Brookings Institute Press, 1997.
- McCormick, Gordon. Class lecture, Seminar in Guerrilla Warfare, Naval Postgraduate School, Monterey, CA, February 16, 2006.
- Merriam-Webster Online. "Change." <http://www.m-w.com/dictionary/change> (accessed August 23, 2006).
- Mintzberg, Henry. "Structure in 5's: A synthesis of the Research on Organization Design." *Management Science*. 26, no. 3 (1980): 322-41. <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=7361248&site=ehost-live&scope=site> (accessed November 23, 2006).

- Murdock, Clark A., Michele A. Flournoy, Kurt M. Campbell, Pierre A. Chao, Julianne Smith, Anne A. Witkowsky, Christine E. Wormuth. *Beyond Goldwater-Nichols: U.S. Government and Defense Reform for a New Strategic Era, Phase 2 Report*. Washington, D.C.: Center for Strategic and International Studies, 2005.
http://www.csis.org/media/csis/pubs/bgn_ph2_report.pdf (accessed August 20, 2006).
- Murray, Williamson and Allan R. Millett, eds. *Military Innovation in the Interwar Period*. New York: Cambridge University Press, 1996.
- Murray, Williamson. "Does Military Culture Matter?" *Orbis* 43, no. 1 (Winter 1999): 27-42. <http://www.sciencedirect.com/science/journal/00304387> (accessed February 20, 2007).
- Nadler, David and Michael L. Tushman. "Beyond the Charismatic Leader: Leadership and Organizational Change." *California Management Review* 32, no. 2 (1990): 77-98.
<http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=4762422&site=ehost-live&scope=site> (accessed January 10, 2007).
- Nagl, John. *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam*. Chicago: University of Chicago Press, 2005.
- National Defense University. Strategic Leadership and Decision Making Section. *Air University*. <http://www.au.af.mil/au/awc/awcgate/ndu/strat-ldr-dm/pt1ch4.html> (accessed January 25, 2007).
- Neustadt, Richard E. and Ernest R. May. *Thinking In Time: The Uses of History for Decision Makers*. New York: The Free Press, 1986.
- Okes, Duke. "Complexity Theory Simplifies Choices." *Quality Progress* 36, no. 7 (July 2003): 35.
<http://libproxy.nps.edu:8080/login?url=http://proquest.umi.com/pqdweb?did=370881671&Fmt=7&clientId=11969&RQT=309&VName=PQD> (accessed June 4, 2006).
- Ortenblad, Anders. "On Differences between Organizational Learning and Learning Organization." *Emerald Journal: The Learning Organization* 8, no. 3 (2001): 125-133.
<http://www.emeraldinsight.com/Insight/ViewContentServlet?Filename=Published/EmeraldFullTextArticle/Articles/1190080304.html> (accessed April 17, 2006).
- Parker, Jay M. "Into the Wind, Against The Tide: Change and the Operational Commander." Master's Thesis, Naval War College, February 8, 1994.
<http://handle.dtic.mil/100.2/ADA279635> (accessed September 6, 2006).
- Pfeffer, Jeffrey. *Managing with Power*. Boston: Harvard Business School Press, 1992.

- Posen, Barry R. *The Sources of Military Doctrine: France, Britain, and Germany between the World Wars*. New York: Cornell University Press, 1984.
- Ricks, Thomas E. "U.S. Counterinsurgency Academy Giving Officers A New Mind-Set: Course in Iraq Stresses the Cultural, Challenges the Conventional." *Washington Post* A10, February 21, 2006. <http://www.washingtonpost.com/wp-dyn/content/article/2006/02/20/AR2006022001303.html> (accessed February 22, 2007).
- Rigsby, Mike. "The Learning Organization: Concept and Application." Master's Thesis, U.S. Army War College, April 15, 1997. <http://handle.dtic.mil/100.2/ADA326355> (accessed July 19, 2006).
- Roberts, Nancy. Class lecture, Coping with Wicked Problems, Naval Postgraduate School, Monterey, CA, Fall 2006.
- Rosenau, James N. "Many Damn Things Simultaneously: Complexity Theory and World Affairs." Paper, Conference on Complexity, Global Politics, and National Security, sponsored by the National Defense University and the RAND Corporation, Washington, DC, November 1996. <http://www.ndu.edu/inss/books/books%20%201998/Complexity,%20Global%20Politics%20and%20Nat'l%20Sec%20-%20Sept%2098/ch04.html> (accessed December 6, 2006).
- Rothstein, Hy. "Less is More: The Problematic Future of Irregular Warfare in an Era of Collapsing States." *Third World Quarterly*. Vol. 28, No. 2 (2007): 275-294.
- Rumsfeld, Donald. *Quadrennial Defense Review Report*. Washington, DC: Department of Defense, September 30, 2001. <http://www.defenselink.mil/pubs/qdr2001.pdf> (accessed February 28, 2007).
- Schön, Donald A. *Beyond the Stable State: Public and Private Learning in a Changing Society*. Harmondsworth: Penguin, 1973.
- Senge, Peter M. *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday/Currency, 1990.
- Senge, Peter M., Art Kleiner, Charlotte Roberts, Richard Ross, George Roth, and Bryan Smith. *The Dance of Change: The Challenges to Sustaining Momentum in Learning Organizations*. New York: Doubleday, 1999.
- Shanley, Michael G., James C. Crowley, Matthew W. Lewis, Ralph Masi, Susan G. Straus, Kristin J. Leuschner, Steven Hartman and Stockly. *Transformation and the Army School System*. Santa Monica, CA: RAND, 2005. http://www.rand.org/pubs/monographs/2005/RAND_MG328.pdf (accessed October 5, 2006).

- Smith, Edward A. *Complexity, Networking, and Effects-Based Approached to Operations*. Washington, DC: CCRP, 2006.
http://www.dodccrp.org/html3/pubs_download.html (accessed October 3, 2006).
- Sullivan, Gordon R. and Michael Harper. *Hope is Not a Method*. New York: Random House, 1996.
- Summers, Jr. Harry G. *On Strategy: A Critical Analysis of the Vietnam War*. New York: Random House, 1982.
- Tucker, David. *Skirmishes at the Edge of Empire*. Westport, CT: Praeger Publishers, 1997.
- U.S. Army Corps of Engineers*. <http://www.hq.usace.army.mil> (accessed February 4, 2007).
- U.S. Congress. House. Committee on Armed Services. *Army Transformation*. 108th Congress Cong., 2nd sess., July 15 and 21, 2004. www.house.gov (accessed July 14, 2006).
- U.S. Congress. House. Committee on Armed Services. *Panel on Gaps-Terrorism and Radical Islam: Special Operations Forces Capability, Capacity, and Posture Gaps for the Global War on Terrorism*. 2nd sess., October 26, 2005.
- U.S. Congress. Senate. Committee on Armed Services. *Defense Organization: The Need For Change*. 99th Cong., 1st sess., 1985, S. Prt. 99-86.
- U.S. Navy Personnel Command Website. “NPS Non- Technical Curricula Slating.” Surface Warfare Battle Admin Section. *Bureau of Naval Personnel*. <http://www.npc.navy.mil/Officer/SurfaceWarfare/BattleAdmin/NPS+Non-Technical+Curricula+Slating.htm> (accessed February 4, 2007).
- “USS Carl Vinson Returns from Deployment.” *USS Carl Vinson (CVN-70)* (July 2005). <http://www.cvn70.navy.mil/> (accessed April 9, 2007).
- Wilson, Gregory. “Anatomy of a Successful COIN Operation: OEF-Philippines and The Indirect Approach.” *Military Review*. November-December 2006, 2-12.
- Wilson, James Q. *Bureaucracy: What Government Agencies Do and Why They Do It*. New York: Basic Books, 1989.

BIBLIOGRAPHY

- Abraham, Arnold J. "Examining Changes in Character and Conduct of War as a Basis for a SOF-Centric Strategy." Paper, 15th NDIA SO/LIC Symposium & Exhibition, Washington, DC, February 2004. <http://www.dtic.mil/ndia/2004solic/abr.pdf> (accessed February 8, 2006).
- Cohen, Michael D. and Lee S. Sproull, eds. *Organizational Learning*. Thousand Oaks: SAGE Publications, 1996.
- Demchak, Chris. *Military Organizations, Complex Machines: Modernization in the U.S. Armed Services*. Ithaca, NY: Cornell University Press, 1991.

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California
3. Dr. Gordon McCormick
Naval Postgraduate School
Monterey, California
4. Dr. Erik Jansen
Naval Postgraduate School
Monterey, California
5. Mr. George Lober
Naval Postgraduate School
Monterey, California
6. Jennifer Duncan
Naval Postgraduate School
Monterey, California
7. Colonel Brian Greenshields
Naval Postgraduate School
Monterey, California
8. James D. Anderson
Joint Special Operations University
Fort Walton Beach, Florida
9. Garry Reid
ASD/SOLIC
Washington, D.C.
10. Richard Balladares
U.S. Special Operations Command
Tampa, Florida
11. U.S. Special Operations Command Library
U.S. Special Operations Command
Tampa, Florida